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Climatological Data for May, 1910.
DISTRICT No. 1, NORTH ATLANTIC STATES.

WILFORD M. WILSON, District Editor.

GENERAL SUMMARY.

The weather conditions for the month of May, 1910, were not in any respect unusual as compared with the same month in other years, but when considered in relation to such exceptional warmth as occurred during March and the early part of April, the month of May seemed decidedly cold and backward. Low temperatures with frequent frosts prevailed during the first half of the month, and although nearly normal conditions prevailed after that time, the mean temperature for May was only 5° higher than that of April. The deficiency in temperature was most marked in the southwestern part of the district where it averaged 2° to 4° daily, but toward the northeast the mean monthly temperature approached the normal, while a slight excess occurred at many stations in the New England States.

Although the precipitation was considerably below the normal for May in nearly all parts of the district, the amount was generally sufficient, as the low temperature, the unusual cloudiness, and the frequency with which showers occurred combined to check evaporation and conserve the soil moisture to the fullest extent.

TEMPERATURE.

The average temperature for the district was 58.0°, which is about 2° below the May normal, and ranged from about 48° at the most northern stations to nearly 64° in parts of Maryland and Virginia. At the opening of the month cold weather prevailed over the northern sections, but from Pennsylvania southward it was remarkably warm, with maximum temperatures quite generally above 75° and at many stations as high as 85° to 90°. In Virginia, West Virginia, and much of Maryland the highest temperatures of the month occurred generally before the 3d, but a cold period set in about the 5th that affected the whole district, temperatures below freezing being recorded on the 6th even in Maryland and Virginia. At Bayard, W. Va., and Morehouseville, N. Y., the minimum on that date fell to 19°, an unusually low temperature for May. Frosts occurred extensively in all sections between the 4th and 7th after which there was nearly a week of milder weather followed by a second cold period, with frosts occurring in nearly all parts of the district from the 13th to 17th. The most serious damage from frosts resulted in the truck farming regions of New Jersey about the middle of the first decade, where the loss was heavy. Elsewhere the damage from the two frost periods was comparatively slight, though there was considerable injury in some parts of New York and Pennsylvania, particularly to early cherries, strawberries, and tender vegetables.

During the remainder of the month the temperature was nearly normal, except about the 21st to the 24th, when warm weather prevailed throughout the district with maximum temperatures ranging generally from 75° to 90°. The highest temperatures of the month occurred in most sections during this period. At Trenton, N. J., on the 24th, the temperature reached 94°, which was the highest recorded in the district within the month. About the 30th there began a change to cooler weather and the month closed with unusually low temperatures.

The growth of vegetation generally was slow, especially during the first half of the month, on account of the prevailing low temperature, and, in some localities, the lack of sufficient moisture. The cool nights at the close of the month were unfavorable to rapid advancement, and the season not only lost the advance gained during the month of April, but can hardly be said to be up to the average in point of time.

PRECIPITATION.

The rainfall of the month was generally below normal and the distribution was comparatively uniform, except in the New England States, where the amount varied from 0.67 inch at Jacksonville, Vt., to 6.68 inches at Patten, Me. More than 6 inches of rain was received also at a few stations in New York, Pennsylvania, and Maryland, but the average precipitation for the district was scarcely more than 3 inches. Although the total precipitation for the month was less than 2 inches at many stations, the supply of moisture was generally sufficient, as the loss of water from rapid run-off and from evaporation was unusually small. However, in southern New Jersey toward the close of the month the deficiency in rainfall materially checked the growth of vegetation and in some localities necessitated replanting.

The precipitation was generally below normal, until the 18th and probably not more than one-third of the month's rainfall occurred before that date. There was a rainy period covering the 3d and 4th, and another beginning about the 8th that continued until the 12th or 13th. The principal period of wet weather began on the 18th and closed about the 27th, during which time the rains were much heavier than those of the earlier part of the month. The heaviest rains occurred on the 25th, but there were comparatively few instances of excessive rates. Except in New York the greatest amount recorded for 24 consecutive hours was at most stations considerably less than 1 inch. Fair weather prevailed on the 28th and 29th, but on the last two days of the month showers were general over the district, being light in the southern sections and comparatively heavy in the northern States particularly New York.

Precipitation at excessive rates has been reported as follows: on the 3d, 0.43 inch in 20 minutes at Baltimore, Md.; on the 9th, 0.25 inch in 5 minutes at Asbury Park, N. J.; on the 24th, 3.83 inches at Pottsville, Pa.; on the 25th, 3.16 inches at Athens, N. Y., 3.00 inches falling within 1 hour and 30 minutes, 2.60 inches at West Point, N. Y., and 2.00 inches in 1 hour and 15 minutes at Dover, N. J.

RIVER CONDITIONS.

There were no unusually heavy rainfalls during the month and the river situation in the district was uneventful. A few irregularities worthy of note were, however, observed, especially in the Hudson at Troy. Here a rise of 1.6 foot occurred on the 10th followed by a gradual decline of 4.1 feet, reaching the minimum stage of the month on the 16th. The Schoharie River reached its highest point of 4.7 feet on the 1st and continued to fall gradually to 2.7 feet about the 22d. Most of the rivers reached their lowest stages on the 18th of the month when a storm of moderate intensity accompanied by generous rainfall caused a considerable rise which continued until the maximum stage was reached on the 26th. The Delaware and Susquehanna rivers were generally at a lower stage throughout the month than during the same month last year.

MISCELLANEOUS.

The deficiency in sunshine noted in April continued through May, the average percentage for the current month, 55, being less by 2 than that for the month preceding and 9 per cent lower than the average in March. The total number of hours averaged 251 for the district and ranged from 197 at Philadelphia, Pa., to 314 at Mount Weather, Va., where the percentage was, respectively, 44 and 71. The number of days with 80 per cent or more of possible sunshine averaged 9 and the number with 20 per cent or less 7.

There was an average of 12 days with .01 inch or more of precipitation, 11 clear, 12 partly cloudy, and 8 cloudy days.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
Maine.																				
Bar Harbor	Hancock	20	24	50.2		78	29	29	31	40	1.75		0.45	T.	8	11	13	7	sw.	Wm. Miller.
Cornish	York	778	55	53.6	- 1.0	85	24	25	6	47	1.68	- 1.99	0.50	T.	11	5	11	15	dw.	T. H. West.
Eastport	Washington	53	38	48.3	+ 1.4	69	27	31	6	25	1.55	- 2.25	0.39	1.4	12	4	14	13	s.	U. S. Weather Bureau.
Fairfield	Somerset	90	25	56.2	+ 2.1	79	20	33	9	43	1.77	- 1.41	0.90	0.0	4	9	13	9		Edward F. Parker.
Farmington	Franklin	450	13	53.6	- 0.5	83	24	25	7	46	2.16	- 1.50	0.45	0.0	14	10	4	17	de.	State Normal School.
Gardiner	Kennebec	163	18	53.5	- 1.8	77	20	27	6	40	2.03	- 1.67	0.45	0.0	11	15	4	12	se.	Samuel D. Soule.
Greenville	Piscataquis	1,000	6	49.4		77	24	24	7	39	4.65	- 1.07	T.	15					U. S. Weather Bureau.	
Houlton	Aroostook	302	8	51.2		76	25	27	7	39	3.75	- 1.80	0.0	6	14	4	13	de.	Bangor & Aroostook R. R.	
Lewiston	Androscoggin	185	36	54.8	+ 0.2	81	24	31	6	37	1.94	- 1.68	0.61	0.0	13	8	6	17	nw.	Union Water Power Co.
Madison	Somerset	257	7	52.2		82	25	26	6	40	2.71	- 0.64	0.0	13	10	3	18	de.	Wm. Jardine.	
Millinocket	Penobscot	386	7	52.5		78	17	26	6	45	2.97	- 0.58	T.	12	6	3	22	sw.	H. S. Ferguson.	
North Bridgton	Cumberland	450	17	55.0	+ 0.1	85	24	28	6	42	3.20	- 0.32	1.12	0.0	14	1	18	12	sw.	G. E. Chadbourne.
Orono	Penobscot	129	41	53.4	+ 0.7	76	17	26	7	43	1.42	- 1.17	0.41	0.0	12	5	10	16	sw.	Agricultural Exp. Station.
Patten	do	550	8	50.0 ^a		76	17	24	7	46	6.68	- 2.02	0.5	11	13	1	18	sw.	Bangor & Aroostook R. R.	
Portland	Cumberland	99	39	52.6	- 0.9	72	29	34	6	25	1.65	- 2.02	0.47	0.0	14	4	10	7	w.	U. S. Weather Bureau.
Presque Isle	Aroostook			50.6 ^a		75	22	25	7	43	3.91	- 1.00	0.0	12	15	4	12	s.	San Lorenzo Merriman.	
Rumford Falls	Oxford	505	17	53.7	0.0	79	24	30	6	35	2.83	- 0.79	0.93		15	13	7	11	nw.	Chas. A. Mixer.
Winslow	Kennebec	90	15	53.1	+ 0.5	80	24	23	6	44	2.67	- 0.65	0.0	12	9	10	12	sw.	Hollingsworth & Whitney Co.	
New Hampshire.																				
Alstead Center	Cheshire	1,120	6	53.2		80	24	30	6	37	3.17	- 0.60	T.	19	11	10	10	sw.	Frank Dewing.	
Benton	Grafton			51.4		77	24	31	6	28	4.33	- 1.37	T.	14	13	9	9	nw.	P. C. Bartlett.	
Rethleford	do	1,470	18	51.3	- 2.7	79	24	27	6	38	4.82	+ 1.76	1.43	0.3	18	11	6	14	nw.	Benjamin Tucker.
Concord	Merrimack	350	50	54.6	- 1.1	86	24	29	6	42	1.81	- 1.43	0.47	0.0	11	4	12	15	nw.	U. S. Weather Bureau.
Durham	Stafford	445	15	54.6	- 0.2	87	24	29	6	40	1.27	- 1.44	0.37	0.0	11	7	12	12	de.	Agricultural Exp. Station.
Franklin	Merrimack	88	11	55.6		88	24	26	6	49	3.09	- 0.51	0.0	17	9	12	10	sw.	Dr	

TABLE 1—Climatological data for May, 1910. District No. 1—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
New York—Cont'd.																				
Bedford	Westchester	450	19	60.2	+ 1.5	87	24	37	6†	37	3.35	- 1.21	0.74	0.0	16	18	5	8		Dr. L. Rosenberg.
Binghamton	Broome	875	19	54.7	- 2.3	80	24	32	16	35	4.12	+ 1.03	2.25	0.0	16	10	4	17	w.	U. S. Weather Bureau.
Bouckville	Madison	1,350	13	52.6	- 1.7	76	24	30	13	31	4.97	+ 1.65	1.01	0.0	12	7	8	16	nw.	L. W. Griswold.
Boyd's Corners	Putnam	560	28								3.41	- 1.27								Thomas Manning.
Carmel	do	500	18	57.2	- 2.1	83	24	32	6	29	3.81	- 0.56	1.25	0.0	8	16	2	13		Do.
Chatham	Columbia	470	9	56.4		86	24	30	6	37	3.60		1.44	0.0	10	13	12	6	n.	Morton R. Tank.
Cooperstown	Otsego	1,250	56	52.2	- 2.4	79	24	30	5†	33	5.05	+ 1.41	1.20	0.0	13	11	15	5	n.	G. Pomeroy Keese.
Corinth	Saratoga	542	8								5.33		1.15	0.0	11					A. M. Hollister.
Cortland	Cortland	1,129	48	55.6	+ 1.3	78	3†	30	16	39	4.14	+ 0.14	1.04	0.0	12	13	11	7	nw.	F. G. Baker.
Cutchogue	Suffolk	32	33	56.2	- 1.1	79	21	35	6	30	2.98	- 0.43	0.93	0.0	10	10	19	2	sw.	Wm. A. Fleet.
De Ruyter	Madison	1,300	7	53.4		78	29	26	6	43	4.92		1.04	0.0	16	8	15	8	s.	R. D. Crandall.
Easton	Washington		20								5.24	+ 1.43	1.64	0.0	6					H. Taber.
Elmira	Chemung	863	31								3.62	- 0.37	0.92	0.0	13	8	15	8	nw.	Gerity Bros.
Fort Hunter	Montgomery	280	2																	C. E. Wing.
Fort Plain	do	316	6	56.6		82	24	34	6†	37	4.57		1.73	0.0	15	13	6	12	w.	Abram Devendorf.
Glen Falls	Warren	340	19	56.2	- 2.0	82	24	33	7	42	5.59	+ 2.52	1.57	0.0	15	5	8	18	nw.	Prof. C. L. Williams.
Gloversville	Fulton	850	18	53.6	- 2.2	80	24	30	13	38	6.03	+ 2.03	1.92	0.0	12	9	15	7	w.	W. L. McLean.
Greenfield Center	Saratoga	314	12	55.2	- 1.9	81	24	31	5	36	6.80	+ 3.82	1.80	0.0	12	12	12	7	sw.	S. E. Darrow.
Greenwich	Washington	425	13	58.2	+ 1.9	86	24	30	6	40	4.51	+ 1.19	0.98	0.0	13	8	20	3	w.	I. V. H. Gill.
Griffin Corners	Delaware	2,260	10	32.6		82	24	26	13	41	2.27		0.65	0.0	10	8	15	8	w.	Kelsey H. Kelly.
Haskinsville	Steuben		15								4.05	+ 0.85	0.83	0.0	12					W. G. Collins.
Homer	Cortland	1,137	2	51.8		75	20†	27	6†	38	4.57		0.65	0.0	16	14	4	13	nw.	Charles C. Mortimer.
Hoosick Falls	Rensselaer	410									4.64		1.48	0.0	16	15	4	9	w.	Sanford L. Cluett.
Indian Lake	Hamilton	1,705	11	50.3	- 2.1	80	29	21	6	45	5.01	+ 1.79	1.10	?	14	14	4	13	n.	Lester Severie.
Jeffersonville	Sullivan	1,240	7	55.2		85	24	25	6	43	2.33		0.89	0.0	10	13	11	7	sw.	Chas. Wilfert, jr.
Lake Pleasant	Hamilton			46.4		71	29	22	6†	36	5.00		0.90	0.0	9					Willett Larence.
Liberty	Sullivan	2,300	28	51.1	- 3.3	75	22	22	1	40	3.55	- 0.47	0.80	0.0	11	16	5	10	w.	Dr. H. M. King.
Little Falls	Herkimer	924	12	54.2	- 1.8	80	24	33	13	31	3.51	+ 0.10	0.80	0.0	11	15	11	5	w.	O. J. Dempster.
Mohawk Lake	Ulster	1,245	14	56.8	- 0.7	80	24	32	6	28	3.57	- 0.20	1.19	0.0	12	12	9	10	nw.	A. K. Smiley.
Morehouseville	Hamilton	1,607	2	49.2		75	20†	19	6	45	3.44		1.38	0.0	10	15	6	10	w.	Theodore C. Remonda.
Mount Hope	Westchester	203	13	57.9	- 1.3	82	24	35	15	37	4.11	- 0.39	1.25	0.0	12	7	17	7		Wm. A. Cornelius.
Newark Valley	Tioga	825	23								5.23	+ 1.57	0.90	0.0	14	14	8	9		M. D. Clinton.
New Berlin	Chenango		3								5.28		1.03	0.0	14					Roger Greene.
New Lisbon	Otsego	1,234	29	50.4	- 2.8	78	24	21	6	41	5.49	+ 1.57	2.08	0.0	13	7	9	15	nw.	G. A. Gates.
New York	New York	314	83	60.2	- 0.9	81	24	44	5	25	1.66	- 1.52	0.65	0.0	11	8	9	14	nw.	U. S. Weather Bureau.
North Creek	Warren	1,002	2	53.0		77	29	30	6†	41	5.53		0.90	0.0	7	11	7	13	w.	W. G. Kenwell.
Northville	Fulton	742	8								5.02		1.30	0.0	8					P. C. Pickard.
Norwich	Chenango	1,015	4			78	21†	30†	12†	35	4.39		1.15	0.0	9					H. S. Hopkins.
Oneonta	Otsego	1,112	16	53.9	- 4.2	82	24	30	13†	42	2.13	- 1.13	0.87	0.0	8	10	8	13	nw.	H. W. Lee.
Oxford	Chenango	916	45	53.2	- 2.4	75	24	27	6	36	5.64	+ 1.69	2.10	0.0	9	4	19	8	w.	John P. Bavis.
Port Jervis	Orange	470	26	59.0	- 0.5	86	24†	32	16	38	1.86	- 2.45	0.33	0.0	12	14	9	8	w.	Prof. John M. Dolph.
Salisbury	Herkimer	1,526	13	52.2	- 2.1	74	24†	26	13	37	5.74	+ 1.32	1.15	0.0	11	14	11	6	w.	Joseph Ryan.
Salisbury Mills	Orange	214	11	57.2		84	21†	32	13	37	3.67	- 0.33	0.80	0.0	10	20	5	6	w.	H. P. Ramsdell.
Scarsdale	Westchester	200	6	57.9		81	24	38	5†	35	3.46		1.10	0.0	8	17	8	6	ne.	C. H. Wilmarth.
Setauket	Suffolk	40	25	57.8	- 0.3	80	24	41	6†	30	2.89	- 0.75	1.10	0.0	10	14	5	12	w.	Selab B. Strong.
Sherburne	Chenango		3								4.46		1.10	0.0	11	13	2	16	a.	E. B. Collins.
Southampton	Suffolk	36	9	56.2		73	21	39	6	26	2.14		0.54	0.0	15	11	16	4	sw.	W. L. Jagger.
Southeast Reservoir	Putnam	310	15								4.19	- 0.40								Thomas Manning.
Spier Falls	Saratoga	400	9	55.1		82	24	32	5†	40	6.63		2.10	?	13	11	9	11	sw.	W. F. Anderson.
Trenton Falls	Oneida	751	7								6.20		1.00	0.0	14					C. W. Young.
Tribes Hill	Montgomery	268	7								5.60		1.30	0.0	10					R. S. Marshall.
Utica	Oneida	537	44								3.76	+ 0.10	0.81	0.0	12					W. E. Young.
Wading River	Suffolk	112	4	57.4		83	24	35	17	37	2.44		0.85	0.0	12	21	2	8	sw.	H. B. Fullerton.
Wappingers Falls	Dutchess	111	20	58.5	- 2.0	82	24	37	6	30	5.05	+ 0.22	1.87	0.0	13	12	15	4	se.	H. C. Townsend.
Warwick	Orange	538	16								3.37	- 0.66	1.16	0.0	11					John W. Sly.
Waverly	Tioga	824	28	54.6	- 3.4	83	24†	26	6	46	3.69	+ 0.33	1.30	0.0	16	4	17	10	nw.	Hon. J. F. Shoemaker.
West Berns	Albany	946	11	54.0	- 2.4	86	23	26	6	43	2.36	- 0.63	0.71	0.0	8	4	7	20	se.	W. J. Haverly.
West Point	Orange	167	61	60.0	+ 0.1	85	22	36	7	37	5.60	+ 1.08	2.60	0.0	7	18	7	6	se.	Maj. Chas. M. Gandy.
Windham	Greene	1,520	10	53.8	+ 0.5	83	24	27	6	39	3.52	+ 0.22	1.08	0.0	11	10	20	1	nw.	A. R. Mott.
Pennsylvania.																				
Altoona	Blair	1,181	22	54.4		86	2	29	16†	42	2.89	- 1.29	1.26	0.0	8					C. W. Billin.
Bethlehem	Northampton	260		61.0		84	24	38	6†	32	2.78		0.65	0.0	12	15	2	14	w.	Prof. E. C. Roest.
Clearfield	Clearfield	1,107	2																	Raymond C. Ogden.
Emporium	Cameron	1,050	23	55.6	- 3.6	82	2	27	6	43	2.04	- 2.61	0.33	0.0	12	10	13	8	w.	T. B. Lloyd.
Ephrata	Lancaster	384	10	58.1	- 2.9	83	29	30	6	39	3.06	- 0.10	0.94	0.0	13	13	8	10	w.	W. L. Frantz.
Everett	Bedford	1,080	12	56.9	- 2.9	83	2†	29	15†	40	3.31	- 0.29	1.00	0.0	9	3	22	6	nw.	B. L. Steckman.
George School	Bucks		3	58.9		87	24	33	6	36	2.06		0.52	0.0	9	15	7	8	sw.	Prof. A. C. Smedley.
Gettysburg	Adams	600	36	60.1	- 0.9	87	24†	33	16	40	2.4									

TABLE 1—Climatological data for May, 1910. District No. 1—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
New Jersey—Cont'd.																				
Bayonne.....	Hudson.....	50	20	60.4	+ 0.1	84	29	41	6†	28	1.72	- 1.86	0.41	0.0	15	12	9	10	w.	J. H. Eadie.
Belvidere.....	Warren.....	289	10	58.0*	+ 2.1	85	24	32*	6	35*	3.25	- 0.03	0.92	0.0	11	9	10	12	w.	S. J. Hixon.
Bergen Point.....	Hudson.....	37	13	60.0	+ 0.3	83	29	30	6	30	2.89	- 1.09	1.12	0.0	13	7	11	13	nw.	Dr. W. H. Mitchell.
Bononton.....	Morris.....	413	20	62.1	- 1.8	90	24	35	6	37	3.22	- 1.03	1.14	0.0	12	10	8	13	sw.	F. G. McIntosh.
Bridgeton.....	Cumberland.....	30	29	62.1	- 1.8	90	24	35	6	37	2.44	- 1.63	0.43	0.0	11	10	8	13	sw.	H. A. Jordan.
Burlington.....	Burlington.....	12	26	62.1	- 1.8	90	24	35	6	37	2.01	- 2.22	0.44	0.0	14	10	8	13	nw.	D. S. B. McCoy.
Canton.....	Salem.....	24	16	62.1	- 1.8	90	24	35	6	37	2.27	- 1.46	0.68	0.0	10	10	10	11	nw.	J. H. Maskell.
Cape May.....	Cape May.....	17	26	59.3	+ 0.7	78	29	44	5†	20	1.88	- 1.11	0.40	0.0	13	8	14	9	s.	U. S. Weather Bureau.
Charlotteburg.....	Passaic.....	719	18	57.7*	+ 0.2	81	21†	30*	16	39*	3.56	- 1.24	2.18	0.0	10	9	10	12	nw.	G. S. Briggs.
Chatham.....	Morris.....	234	8	60.8	- 1.1	87	24	35	7	39	2.90	- 0.79	0.49	0.0	10	9	10	12	w.	M. A. Butler.
Clayton.....	Gloucester.....	126	17	60.8	- 1.1	87	24	35	7	39	2.46	- 0.79	0.49	0.0	10	9	10	12	w.	W. T. Farley.
College Farm.....	Middlesex.....	100	15	60.7	+ 1.2	90	20	35	6	39	2.86	- 1.04	1.06	0.0	12	9	11	11	nw.	G. B. Thrasher.
Culvers Lake.....	Sussex.....	848	9	60.7	+ 1.2	90	20	35	6	39	3.85	- 0.96	0.96	0.0	14	10	10	11	nw.	R. E. Riker.
Dover.....	Morris.....	575	26	57.2	- 1.4	82	29	34	5	34	4.25	+ 0.11	2.20	0.0	11	10	11	10	w.	W. C. Harris.
Elizabeth.....	Union.....	33	31	62.4*	+ 0.2	85	24†	40*	6†	34*	2.42	- 1.50	0.81	0.0	12	10	8	13	w.	W. M. Oliver.
Hemington.....	Hunterdon.....	187	22	60.6	+ 0.7	88	24	34	6	35	2.22	- 2.07	0.70	0.0	11	9	10	12	w.	H. E. Dents.
Friesburg.....	Salem.....	100	18	61.0*	- 0.7	87	24	35*	6	35*	2.35	- 1.56	0.56	0.0	11	10	10	11	nw.	H. C. Perry.
Haddonfield.....	Camden.....	75	16	61.0*	- 0.7	87	24	35*	6	35*	1.93	- 1.69	0.57	0.0	12	10	10	11	nw.	C. F. Richardson.
Hammonont.....	Atlantic.....	80	12	60.4	- 0.7	89	24	31	6	39	2.41	- 1.41	0.64	0.0	13	11	7	13	sw.	Orville Bassett.
Hightstown.....	Mercer.....	85	18	60.4	- 0.7	89	24	31	6	39	2.41	- 1.41	0.64	0.0	13	11	7	13	sw.	Ernst Wenger.
Imlaystown.....	Monmouth.....	106	24	61.5*	- 0.7	87	24	34*	6	37*	2.88	- 1.01	0.68	0.0	14	10	10	11	sw.	Dr. F. C. Price.
Indian Mills.....	Burlington.....	76	21	60.8	- 1.2	91	21	33	6†	42	2.01	- 2.03	0.51	0.0	12	10	10	11	nw.	James Armstrong.
Jersey City.....	Hudson.....	15	12	61.8	+ 0.4	85	29	42	15	29	1.93	- 1.25	0.80	0.0	13	9	15	7	nw.	S. K. Pearson, Jr.
Lakewood.....	Ocean.....	54	8	60.8	- 0.9	87	24	33	6	35	2.46	- 1.61	0.51	0.0	11	10	10	11	nw.	H. R. Major.
Lambertville.....	Hunterdon.....	95	24	60.8	- 0.9	87	24	33	6	35	2.46	- 1.61	0.51	0.0	11	10	10	11	nw.	W. R. Bowne.
Layton.....	Sussex.....	550	11	56.9	- 1.0	84	24	27	6	40	2.36	- 0.97	0.98	0.0	11	9	9	13	sw.	W. C. Hursh.
Little Falls.....	Passaic.....	175	7	60.2	- 1.0	84	24	27	6	40	2.50	- 0.97	0.69	0.0	14	10	10	11	sw.	A. Sweetman.
Long Branch.....	Monmouth.....	30	3	60.2	- 1.0	84	24	27	6	40	2.50	- 0.97	0.69	0.0	14	10	10	11	sw.	R. B. Bobbit.
Mahwah.....	Bergen.....	312	8	60.4	- 0.7	87	24	38	6	34	2.25	- 1.78	0.37	0.0	11	10	10	11	nw.	C. L. Barker.
Moorestown.....	Burlington.....	71	48	60.4	- 0.7	87	24	38	6	34	2.25	- 1.78	0.37	0.0	11	10	10	11	nw.	J. C. Beane.
Newark.....	Essex.....	140	67	61.6	+ 0.8	84	29	41	5	25	1.88	- 2.16	0.60	0.0	11	8	10	13	nw.	Prof. Wm. Wiener.
New Brunswick.....	Middlesex.....	61	57	61.0	+ 0.4	88	24	34	6	40	3.34	- 0.57	1.60	0.0	11	9	10	12	w.	W. T. Woerner.
Newton.....	Sussex.....	678	31	57.8	- 1.5	83	24†	33	5†	36	3.16	- 0.98	1.10	0.0	11	9	9	13	nw.	B. H. Kienbaum.
Northfield.....	Atlantic.....	16	3	60.4	- 0.9	85	24	38	6†	31	2.95	- 1.54	0.96	0.0	12	7	10	14	nw.	W. L. Flick.
Oceanic.....	Monmouth.....	110	39	59.6	- 1.6	87	24	36	6	36	2.09	- 0.68	0.92	0.0	11	10	10	11	nw.	Prof. C. E. Diets.
Paterson.....	Passaic.....	196	13	60.0	- 0.3	84	21†	37	5†	37	3.14	- 1.41	1.42	0.0	10	7	16	8	sw.	H. A. Probert.
Phillipsburg.....	Warren.....	196	13	60.0	- 0.3	84	21†	37	5†	37	3.14	- 1.41	1.42	0.0	10	7	16	8	sw.	D. W. Smith.
Plainfield.....	Union.....	100	24	60.0	- 0.3	84	21†	37	5†	37	3.14	- 1.41	1.42	0.0	10	7	16	8	sw.	John Neagle.
Pleasantville.....	Atlantic.....	26	12	60.0	- 0.3	84	21†	37	5†	37	3.14	- 1.41	1.42	0.0	10	7	16	8	sw.	L. Van Gilder.
Pompton Plains.....	Morris.....	195	8	60.0	- 0.3	84	21†	37	5†	37	3.14	- 1.41	1.42	0.0	10	7	16	8	sw.	M. S. Taylor.
Rancocas.....	Burlington.....	68	47	57.4*	- 1.0	82	21	30*	7†	42*	3.89	- 0.54	2.00	0.0	9	9	10	12	nw.	Spencer Haines.
Rivervale.....	Bergen.....	70	19	57.4*	- 1.0	82	21	30*	7†	42*	3.89	- 0.54	2.00	0.0	9	9	10	12	nw.	G. S. M. Holdrum.
Runyon.....	Middlesex.....	18	4	59.4	- 0.6	81	24	39	5†	26	2.10	- 1.36	0.80	0.0	7	9	11	11	nw.	J. H. Cottrell.
Somerville.....	Somerset.....	76	27	59.4	- 0.6	81	24	39	5†	26	2.10	- 1.36	0.80	0.0	7	9	11	11	nw.	P. Hardcastle.
South Orange.....	Essex.....	200	40	59.4	- 0.6	81	24	39	5†	26	2.10	- 1.36	0.80	0.0	7	9	11	11	w.	Dr. W. J. Chandler.
Sussex.....	Sussex.....	442	20	59.2	- 0.7	85	24	34	13†	35	3.30	- 0.61	1.20	0.0	11	10	10	11	w.	Prof. W. H. Seeley.
Trenton.....	Mercer.....	60	38	63.0*	+ 1.2	94*	24	39*	6	33*	2.00	- 2.06	0.56	0.0	12	9	11	11	nw.	E. R. Cook.
Tuckerton.....	Ocean.....	23	17	59.5	- 0.2	86	29	35	6†	38	2.36	- 1.07	0.70	0.0	13	10	11	10	sw.	F. R. Austin.
Vineland.....	Cumberland.....	118	41	59.4	- 1.6	87	24	35	7	37	2.29	- 1.64	0.42	0.0	12	11	10	10	sw.	Alfred Chalmers.
Woodbine.....	Cape May.....	43	19	59.4	- 1.6	87	24	35	7	37	2.29	- 1.64	0.42	0.0	12	11	10	10	sw.	Prof. R. D. Maltby.
West Virginia.																				
Bayard.....	Grant.....	2,590	8	54.0	- 2.7	88	2†	19	6	45	3.20	- 1.01	1.05	0.0	8	8	30	3	w.	Solomon Clark.
Burlington.....	Mineral.....	875	15	59.0	- 2.7	88	2†	28	6†	47	3.10	- 1.01	1.05	0.0	8	8	30	3	w.	J. W. Vandiver.
Franklin.....	Pendleton.....	3	56.1*	86*	2	25*	6	47*	6	47*	3.10	- 1.01	1.05	0.0	8	8	30	3	w.	A. A. Martin.
Lost City.....	Hardy.....	4	57.7	82	23	32	6†	38	2	17	0.44	0.0	11	11	14	6	6	6	w.	B. D. Hingardner.
Martinsburg.....	Berkley.....	435	19	61.7	- 1.1	91	24	34	16	42	2.29	- 1.70	0.86	0.0	8	15	12	4	nw.	G. W. Van Metre, C. E.
Moorefield.....	Hardy.....	900	14	60.0	- 3.3	91	1	25	6	50	2.51	- 1.28	0.79	0.0	7	7	23	1	nw.	John C. Fisher.
Romney.....	Hampshire.....	824	14	60.0	- 3.2	90	22	28	6	48	2.75	- 1.31	0.75	0.0	8	8	16	7	w.	John C. Linticum.
Upper Trant.....	Pendleton.....	1,233	12	58.2*	- 3.9	90*	2	25*	6	46*	1.70	- 2.05	0.45	0.0	10	6	18	7	w.	J. M. Mallow.
Maryland.																				
Annapolis.....	Anne Arundel.....	45	32	59.8	+ 4.1	75	23	42	6	26	6.39	+ 2.00	1.20	0.0	15	7	16	8	se.	W. M. Abbott.
Bachmans Valley.....	Carroll.....	860	17	58.2	- 3.2	86	24	30	6†	40	1.74	- 3.79	0.38	0.0	10	22	5	4	w.	D. Paul Oswald.
Baltimore.....	Baltimore.....	115	40	62.2	- 2.0	85	24	44	16	26	2.95	- 0.61	0.67	0.0	16	7	15	9	nw.	U. S. Weather Bureau.
Cambridge.....	Dorchester.....	25	12	64.0	- 1.8															

TABLE 1—Climatological data for May, 1910. District No. 1—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		Prevailing wind direction.
Maryland—Cont'd.																				
Van Bibber.....	Harford.....	100	13	60.4	- 2.5	86	23†	31	6	44	4.75	+ 1.31	1.91	0.0	14	19	5	7	se.	J. Benj. Ford.
Westernport.....	Allegany.....	1,000	14	58.9	- 3.1	90	1	28	6	42	2.45	- 1.67	0.91	0.0	11					Prof. O. H. Bruce.
Woodstock.....	Baltimore.....	392	36	62.0	- 0.9	90	1	38	6†	37	2.97	- 0.90	0.75	0.0	13	15	9	7	nw.	Rev. A. J. Donlon, S. J.
Delaware.																				
Delaware City.....	Newcastle.....	8	8	61.8		86	24	39	6	27	2.43		0.51	0.0	9	25	5	1	s.	H. Morton Price.
Dover.....	Kent.....	22	22	62.3	- 1.3	90	24	35	6	38	1.76	- 1.90	0.30	0.0	14	13	12	6	sw.	Thos. F. Dunn.
Milford.....	do.....	26	26	63.0*	+ 0.1	89*	24	38*	7†	35	2.08	- 1.87	0.43	0.0	11	13*	6*	11*	nw.	C. J. Holzmüller.
Millsboro.....	Summit.....	18	18	61.4	- 1.6	90	3	35	16	41	2.64	- 1.17	0.55	0.0	11	14	4	13	sw.	Rev. L. W. Wells.
Seaford.....	do.....	17	17	61.5	- 1.8	85	3†	36	16	36	2.66	- 1.54	0.82	0.0	12	14	10	7	nw.	E. B. Brown.
District of Columbia.																				
Washington.....	District of Columbia..	112	40	61.5	- 2.7	87	24	39	7	35	3.43	- 0.40	0.68	0.0	16	13	14	4	nw.	U. S. Weather Bureau.
Virginia.																				
Culpeper.....	Culpeper.....	450	2	61.6		87	3	34	7†	38	2.86		0.78	0.0	13	7	22	2	nw.	Col. H. C. Burrows.
Dale Enterprise.....	Rockingham.....	1,350	31	57.8	- 5.4	85	1	26	15	45	2.89	- 1.73	0.70	0.0	14	7	15	9	sw.	Rev. L. J. Heatwole.
Doswell.....	Hanover.....	134	9																	Rich., Fdksbg. & Pot. R. R.
Eastville.....	Northampton.....	15		63.6		90	3	40	14	35	2.92		0.80	0.0	9	14	7	10	sw.	Thos. B. Robertson.
Fredericksburg.....	Spottsylvania.....	100	21	63.7	- 1.5	90	1†	35	7	38	3.42	- 0.77	1.55	0.0	15	10	17	4	sw.	S. G. Howison.
Lincoln.....	Loudoun.....	500	9	60.9		92	23	30	7†	44	2.38		0.54	0.0	8	4	22	5	nw.	Dr. Geo. Roberts.
Mount Weather.....	do.....	1,728	6	55.5	- 1.8	80	3	35	6	30	2.40	- 0.90	0.53	0.0	14	10	13	8	nw.	U. S. Weather Bureau.
Nokesville (near).....	Fauquier.....	350	8																	Andrew Low.
Quantico.....	Prince William.....	16	13	62.0		85	1	32	17	39	4.17		1.60	0.0	6				nw.	Rich., Fdksbg. & Pot. R. R.
Shenandoah.....	Page.....	937	9																	Norfolk & Western Ry.
Staunton.....	Augusta.....	1,380	18	58.9	- 4.9	87	1	31	6†	37	2.58	- 1.45	0.55	0.0	12	11	15	5	sw.	Ernest Nothnagel.
Stephens City.....	Frederick.....	710	18	60.0	- 3.9	89	3†	30	16	43	2.13	- 1.11	0.51	0.0	12	9	15	7	sw.	B. T. Argenbriht.
Warsaw.....	Richmond.....	160	18	61.5	- 4.5	86	2	36	16	35	3.60	- 0.07	1.20	0.0	13	6	24	1	n.	C. H. Constable.
Woodstock.....	Shenandoah.....	927	14	60.8	- 3.2	89	1†	32	6	43	2.06	- 1.85	0.48	0.0	15	16	12	3	w.	Miss A. G. Miley.

- * , * , etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
 * Precipitation included in that of the next measurement.
 † Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.
 † Also on other dates.
 † Separate dates of falls not recorded.
 † Data are from standard instruments not supplied by the U. S. Weather Bureau.
 † Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.
 † Estimated by observer.
 † Precipitation for the 24 hours ending on the morning when it is measured.
 † Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—Daily precipitation for May, 1910. District No. 1, North Atlantic States.

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Maine.																																	
Bar Harbor.	Coast.	T.	T.	.30	.10					T.	T.	T.			T.				.10	.05					.45	.40	T.	.05	.30		T.		1.75
Cornish.	Saco.	.02	.50	.03	T.					.17	T.				T.	T.			.30		.65	.08	T.			.01	.06	.08	.11		.01	.30	1.88
Danforth.	Penobscot.			.30	T.						T.														.15	T.	T.	.75			.05	1.10	2.40
Debaconag.	do.																																
Eastport.	Coast.		.02	.39	.14					.07		.12			T.				.06	.09					.34	.04	.09	.01			T.	.18	1.55
Fairfield.	Kennebec.					.10				.07															.16		.61	.90					1.77
Farmington.	do.	.01		.32			.04			.05	.05					T.			.20	.25	.10				.20	.33	.01	.10		.05	.45	2.16	
Gardiner.	do.	.01	T.	.45	T.					.14	T.				.01				.17	.31	.02				.15	.07		.28		.42		2.03	
Greenville.	do.	.08	.42	.26	T.					.25	.16	.01							.24	.01				.10	.18	.93	.21		.09	.04	1.07	4.65	
Houlton.	St. John.	.20			T.					.30									.25								.50			1.80		.70	3.75
Lewiston.	Androscoggin.	.02	.36	.10				T.		.14		T.			T.				.26	.16	.01				.18	.03	.01	.05	.01		.61	1.94	
Madison.	Kennebec.			.64			.02			.13	.02								*	.39	.64				.25	.07	.06	.62	.08		.39	2.71	
Millinocket.	Penobscot.		.03	.56	.02					.10	.15	.02							.37	.03	.56	.20			.37	.03	.56	.20	.10		.58	2.97	
North Bridgeton.	Saco.	.02		.34	T.				T.	.10	.07			*	1.12				.20	.22			T.			.20	.07	.26	.07		T.	.60	3.20
Orono.	Penobscot.	.01	.02	T.	.41	.05				.08	.02					.05									.20	.07	.26	.07			.18	1.42	
Oquossoc.	Androscoggin.																																
Patten.	Penobscot.		.13	.83	.05					.28										.47					2.02	.58	.33	1.09	.12		.78	6.68	
Portland.	Coast.	T.	.34	.02	.02					.15	.24	.01			.07				.18	T.	.11		.01	.06	.06	.11	.04				.47	1.65	
Presque Isle.	St. John.	.03	.36	.63	T.					T.	.20								.20						.27	.38	.21	1.00	.18		.05	.40	3.91
Rumford Falls.	Androscoggin.	.03	.60							.07	.04	T.			.06				.51	.04	.04			.12	.06	.08	.17		.05		*	.93	2.83
The Forks.	Kennebec.	*	*	.80						.30	.25				.10				*	.20						2.65		.25		*	.96	5.35	
Winslow.	do.				.48	.02				.08									*	.38						2.2	.10	.42	.65		.22	2.67	
New Hampshire.																																	
Alstead Center.	Connecticut.	.28	.01	.56	.08					.26	.04	.06		.01	T.	.10			.58	.01	.23	.02	T.	.08	.12	.60	.06			.04	.63	3.17	
Benton.	do.	.17		.61	.04					.10	.17	T.			.05				*	.67		.12				.08	.71	.24		*	1.37	4.33	
Bethlehem.	do.	.12	.01	.96	.03			T.	.03	.15	.24			T.	.22	.02			.53	.23	.04					.89	.72	.04	.16		.04	.39	4.82
Brookline.	Merrimac.	T.	.11	.44	.09	.04		T.		.24		.01		T.	T.				.47		.30	.08		.20		.05	T.		T.	.03	.12	1.81	
Concord.	do.		.08	.21	.13		.02			.02					.06				.37		.66									.32		1.27	
Durham.	do.	.38	.01	.40	.13		T.		.21	.03	.03			.13	.22				.51		.29			.05	.05	.07		.07		.04	.47	3.09	
Franklin.	do.	.12	.32	.17	.05				.15	.05			.02	T.	.15				.59		.23		T.	.25	.10	.17	.07	.04		.04	.50	3.02	
Grafton.	do.	.14	.45	.03	.03		T.		.39	.05	.05		.02	.06	.08				.27		.20			.14	.34	.46	T.	.04		.05	.43	3.25	
Hanover.	Connecticut.	.17	T.	.53	.05				.30	T.		.02	.03	.15	.13				.43		.17			.02	.11	.06	.06	.01		.02	.08	2.34	
Keene.	do.	.01	.04	.14	.04				.11										.42		.27		T.	T.	.05			.01		.01	.28	1.38	
Nashua.	Merrimac.	T.	.15	.02	.06			T.		.13						.20			.45		.37					T.			T.		T.	.41	1.79
Newton.	do.	.08	.06	.56	T.			T.		.23	T.					T.			.60		.11	T.		.34	.08	.20	T.	T.		.18	.97	3.41	
Plymouth.	do.																																
Vermont.																																	
Bloomfield.	Connecticut.	.12		1.20			.01			.08	.48				.08				.30	.35		.05	.16		1.35	1.18	.11	.16		.11	4.94		
Cavendish.	do.	.38	.55		T.					.28	.03			T.	.57	.27			.51		.27		T.	.17	.15	.39	T.		.04	T.	3.10		
Chelsea.	do.	.08	.80	.42			T.			.35	.04								.48		.05					.88	.33				.06	.89	4.38
Jacksonville.	do.	.07	.10							.07	.01	.05		.01	.02				.07		.10	.01	.01	.02	.01				.10	.02	.67		
Manchester.	Hudson.	.30	.61							.42	T.			T.	.29				.79		.42			.23	T.	.98			.27	.20	4.51		
St. Johnsbury.	Connecticut.	T.	.03	T.	.87		.01			.25	.33	T.		.08	T.				.30	.15	.03			T.	.81	.79	T.	.20		.40	4.25		
Vernon.	do.	.11	.03	.40	.07	.01				.31			.06						.38		.10		T.	T.	.14	.04			.65	.08	2.80		
Woodstock.	do.	.22		.57						.36					.57				.37		.24		.17	T.	.73				*	.34	3.57		
Massachusetts.																																	
Amherst.	Connecticut.	T.	.09	.09	T.	.16		.04	.42	.01				T.	.17			.42		.25		.03	.04	.05	.09	.02			.13	.73	2.67		
Ashland.	Merrimac.	.03		.02	.16	.06		.05	.16										.31		.06		.03		.02		.04			.22	1.16		
Bakers Bridge.	do.			.15	.16				.23										.23		.08									.24	1.09		
Bedford.	do.	.01		.12	.06		T.	T.	.22	T.					.09	T.			.37		.12		T.		T.		.07	.03		T.	.34	1.43	
Blue Hill.	Coast.	.01	T.	.02	.09			.11	.14	.01	T.				.01				.29	.01	.11		T.	.02	.10	.18	.08	.04		.02	.36	1.60	
Boston.	do.		T.	T.	.08			T.	.09	T.					.01				.16		.04		.01		.05	T.	T.		.01	.57	1.02		
Chestnut Hill.	do.	.03		.06	.03			.11	.09						.05				.37		.14	.07			.08		.04	.03		.79	.14	2.03	
Clinton.	Merrimac.	.01	.02		.14			.01	.28	.02				T.					.31		.17		T.	.02	.11			.03	.02		.63	1.77	
Concord.	do.	T.	T.	.16	.08			.02	.23	.01				T.	.05				.28		.15	T.		T.	.03		.10	.02		.34	1.47		
Fall River.	Coast.			.62				.28	.17		.10			.02	.10				.31		.32			.30	.01	.04			.05	.40	2.12		
Fitchburg.	Merrimac.		.12	.07	.16			T.	.16	.02				T.	.04	.03			.48		.25	T.		.05	.12			.02		.01	.31	1.84	
Framingham.	do.	.03		.03	.20			*	.25	.01					.02				.31		.07		.04		.02		.04			.32	1.34		
Haverhill.	do.	.01		.05	.09			.12							.03	.01			.15	.13	.39	T.		T.	T.	.03	.05	T.	T.	.34	1.40		
Hingham.	Coast.		T.	T.	T.			.09	.09	.03					.01				.30		.25			T.	.24	.32	.04		.35	.30	3.99		
Hyannis.	do.		*	.04				.40	.15	.16									.12		.46				18.1	.65	.51		.02				
Jefferson.	Merrimac.	.01		.02	.24			*	.22						.19				.31														

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2.—Daily precipitation for May, 1910. District No. 1—Continued.

Stations.	River basins.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		31
Connecticut—Cont'd.																																	
Farmington.....	Connecticut																																
Hartford.....	do	.02	.03	T.	.05					.15	.40	.03	.01		T.	.11	T.		.17		T.	.24		.04	.04	.36		T.		T.	.10	.71	2.40
Hawleyville.....	Housatonic			.07					.15		.32	.29			.08				.28		T.	.62			.04	.04	.36	.17		T.	.98	.13	3.20
Lake Konomoc....	Coast			.10						.68	.09							.49	.10			.59			.09								2.14
New Haven.....	do	.01	.05		T.				.21	.14	.06	.35	T.		T.	T.		.40		T.	1.15		.02	.02	.74		.02			1.09	.18	4.34	
New London.....	do				.18				.22	.74		.25	.05		.27			.65	.31	T.	.24		.02	.02	.16				T.	.12	.31	3.61	
North Grosvenordale..	do	.03	.01	.01	.03				.10	.14		.13			.40			.30			.05			.04	.03	.03				T.		.37	1.02
Norwalk.....	do								* .30	.20	.10	.10		.13				.30			1.40		.05							.59	.18	3.18	
Southington.....	do								.10	.20	.10	.10		.38	T.		.11		.80			.30				.20			*	.10	.40	2.68	
South Manchester....	Connecticut		.14	.46	.11				*	.35	.07							.18							.23	.66	.02			*	.68	.21	2.81
Storrs.....	Coast					.12				.39		.03						.26				.04				.23					.43	.1	
Torrington.....	Housatonic														T.	T.		.33			.43		T.		.10	.09	.28	.04	T.		T.	.35	2.57
Voluntown.....	Coast				.12				.24	.34	.05	.20			T.	T.		.37			.32		T.		.02	.01	.05			.58		.32	
Wallingford.....	do	T.	.02						* .09	.26	T.							.47				.46		.02	.05	.08	T.	T.		.13	.93	2.95	
Waterbury.....	Housatonic		.02	.05					* .56	.13	T.				T.	.05	T.		.27				.26		.02	.05	.14			*	.90	.21	
West Simsbury.....	Connecticut	T.	T.	.02					* .48	.00	T.				T.	.12	.08		.47											*			
New York.																																	
Addison.....	Susquehanna	.03	.62	.42	.01				.03	.25		.02						.65		T.	.20	.16	T.	.29	.83	.02	.01		.02	.18	.05	3.19	
Albany.....	Hudson	T.	.08	.37					.01	.17	T.	.01			.01			.42		.01	.13	T.	.07	.87						1.31	.03	3.49	
Alfred.....	Susquehanna	.18	.51	.72	.02				T.	.04	.05				T.			.05		.14	.21	.18	T.	.80	.25	.01	.10		.11	.01		3.38	
Amsterdam.....	Mohawk	T.	.44	* .23					T.	.25	T.	.08			T.			* .30			.52	T.	.28	* 1.05	T.					1.65		4.42	
Athens.....	Hudson		.10	.38		T.			T.	.08	T.				T.			.10			.18	T.	.02	.36		.07			1.36	.02	5.47		
Ballston Lake.....	do		.46	* .32					T.	.09	T.	.07			.06	.11		.59	.05		.47	T.	.04	.23	.25	T.			.61	.07	3.33		
Bedford.....	Coast			.01	.07				.18	.46	.02	.31	.02					.59			.01	.46	.01		.01	.03	.19		.74	.30	3.35		
Binghamton.....	Susquehanna	.13	.24	.33					.02	.27	.01	.04						.13		.22	.12		.50	.75	T.	.02		.27	.05	.03	4.63		
Bourkville.....	do		.26	.77	.02	.03				.33		.13						.28			.52		.90	1.01		.08		.64			4.97		
Carmel[].....	Hudson			.13					* 1.25	* .32					T.			.35			.74	*	.07	*	.26				*	.68	3.81		
Chatham.....	do	.10	T.	.33		T.			T.	.08	T.							.28			.28			.13	1.44	.06			.60	.33	3.60		
Cooperstown.....	Susquehanna	.50		.57					.07	.30	.17					.06		.36		.35			.11	.20	.87			.12		.37	5.05		
Corinth[].....	Hudson		.25			.55									.12			.32	.50		.60		.41	.63	.70		.10			1.15	5.33		
Cortland.....	Susquehanna		.35	.64	.04					.25		.19						.22			.65		.26		1.04		.15	.02		.30		4.18	
Cutchogue.....	Coast					T.			.21	.26	T.	.39	.04		T.			.42	.37		.67	T.	T.	.03	.06			.02	.03	.28		2.98	
De Ruyter.....	Susquehanna	T.	.22	.69	.01				.07	.37		.19						.42		.10	.60	.10	T.	.50	1.04	T.	.15	.04		.02	.40	4.92	
Easton.....	Hudson		.96							.24								.46		.53			T.	1.26					*	1.79	.54	2.24	
Elmira.....	Susquehanna	.68	.12	.56					.10								.13		.25				.92	.53	.01	.03		.05	.20	.04	3.62		
Fort Hunter[].....	Mohawk																																
Fort Plain.....	do	T.	.27	.45	.07	T.			.01	.17		.11				.05		.32	.19			.40			.05	1.73	.30	.03		.42	T.	4.57	
Glen Falls.....	Hudson	T.	.25	.68	.03				* .08	.10	.03				.02	T.		.62		*	.37	.03	T.			.37			1.11	.46	5.59		
Gloversville.....	Mohawk	T.	.42	.40	.06				T.	.10	T.							.68	.16		.72			.34	1.92	.23			.92	.08	6.03		
Greenfield Center.....	Hudson		.25	.38					T.	.30	.10				.08			.62			.60			.82	1.25	.32			1.80	.18	6.80		
Greenwich.....	do	.01	.21	.40	.02				T.	.19	T.	.03			T.			.60	.11		.37	T.			.22	.98			.90	.47	5.51		
Griffin Corners.....	Delaware		.10	.43	.08				T.	.23		.20						.22			.12	T.		.65	.04	T.			.20		2.27		
Hackinsville.....	Susquehanna		* .52	.79	.05				.04	.24		.22			*			.15		.09	.30	.58	T.	.17	.83	T.	.25	*	.30	.02	4.05		
Homer.....	do	T.	.40	.65					* .04	.29	.12				.06	.02		.32		.15	.58	.27	T.	.63	.62	.01	.15	.02	.01	.26	T.	4.57	
Hoosick Falls[].....	Hudson		* .20	.04	.45	.01				.16	.10	.20						.02	.44	*	.28	*		.04	1.01	.05			T.	1.48	4.64		
Indian Lake.....	do		.20							.10	.20							.20	.21		.40				1.01	.40			.30	.40	5.01		
Jeffersonville.....	Delaware					T.			.05	.18		.05						.34		T.	.45	T.	T.		.89	T.	.06		.11	.02	2.33		
Lake Pleasant.....	Hudson		.70	.80					.30	.16	T.	.10						.70			.90		T.					.90	.10	.70	5.00		
Liberty.....	Delaware			.50						.30	.10							.70	.18		.55		.20	.30	.10	.05	.05		.05	.60	3.55		
Little Falls.....	Mohawk	T.	.40	.80	.16				T.	.35		.10						.80		.18		.48		.20	.10	.05			.25		3.57		
Mohawk Lake.....	do		.05	*	.30	.04			.30		.06							.35		.57		.03		.40	*	1.19	.05		.25		5.44		
Morehouseville.....	Mohawk		.60	.90					.33	.22	.06	.15						.73	.30		.75		.35	.12	.20				.35		5.44		
Mount Hope.....	Coast			.12	.15				.33	.22		.10			T.			.22			.35	.12	.20			.65			1.25	.40	4.11		
Newark Valley.....	Susquehanna	T.	.72	.63					.02	.48	T.	.02					.44	T.		.50	.13	T.	*	.90	.90	.08	.65		.30	.06	5.23		
New Berlin[].....	do		.47		.66		T.		T.	.23	.26						* .29	.10	*	.44	*		.09	1.03	1.00	.10	.08	*	.17	.36	5.28		
New Lisbon.....	do		.40	.44					.06	.22		.25					.32		.10	*	.40			.30	.28	.11	.15		.44	.25	4.49		
New York.....	Coast	T.	.05	T.					.06	.31	T.	T.	.01		T.		.38		.04	.61		.03	T.	.16		.01			.02	T.	1.66		
North Creek.....	Hudson			.80						.80							.23	.08		.30				.86	.36				*	.90	3.53		
Northville[].....	do	.32		.36								.10					.60		.71				1.08	1.30				.55		.25	4.39		
Norwich.....	Susquehanna			.01	.68					.30							.47			.55				.13	.77	.31			.10		2.13		
Oneonta.....	do			.15						.17		.06					.16					T.	.47	.87		.15			.10		2.13		
Oxford.....	do	T.	.65	.55		T.			T.	.22		.21										T.	.80		.70	2.0	T.	.22	T.	.19	T.	5.64	
Port Jervis.....	Delaware			.18					.07	.31	.20						.17				.25		.02	.33				.10	.01	.08	.14	1.86	
Salisbury.....	Mohawk		.48	.84	.18					.15		.16					1.05	.20		1.14				.13		.11			.28		5.74		
Salisbury Mills.....	Hudson								* .80	*	.15				.18			.32			.38		*	.26	.77	.04	T.		.58	.18	3.67		
Searsdale.....	Coast			.25						.50					T.			.48			.90		T.		.10	.13		T.	.75	.35	3.46		
Setauket.....	do		T.	.02					.12	.13	*	.08	.02		T.			.29			.60	T.		.30	T.	T.							

TABLE 2.—Daily precipitation for May, 1910. District No. 1—Continued

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Pennsylvania—Cont'd.																																	
Hyndman.....	Potomac.....			T.				.02	.02	.29	.01	.27	.09					.12	.18	.45	.44			.84	.19	.04	T.		.05	.14	.03	3.09	
Kennett Square.....	Coast.....		.21						.29	.11	.09	.28			T.			.24		.68	.05			.12	.10	.01	T.		T.	T.		3.18	
Lancaster.....	Susquehanna.....		.40						.48			.17						.37		.37	.17			.18	.65				T.	T.		2.42	
Lansdale.....	Schuylkill.....								.25	.14		.04	.05					.19			.52			1.00					T.	T.		2.19	
Lawrenceville.....	Susquehanna.....	.08	.55	.40	.10				.18			.10							.70					.95	.40	T.	.02		T.	.35		3.83	
Lebanon.....	do.....			.06	.03				.21	.15	T.	.19	.03		.02			.23		.17	.54	.01	.04	T.	.66	.08	.02		T.	T.	T.	2.44	
Le Roy.....	do.....	.33	.40						.01	.40	.05							.20		.05	.18			.01	.55	.81	.06	.05		.02	.14	.01	3.27
Lewisburg.....	do.....								.01	.84		.01												1.50	.55	.89	.16	.02				3.92	
Lock Haven.....	do.....	.26	.30						T.	.41		.02						.12		.40	.34			.29	.22	.85			.10	.12	.03	3.37	
Marion.....	Potomac.....								.33	T.	.20	.06						.07		.20	.08	.07		.05	.127	.85				T.		3.27	
Mauch Chunk.....	Delaware.....		.07						.15	.47	.03	T.						.31		.32	1.23		.02		1.90	.02	.03					4.55	
Mifflintown.....	Juniata.....		.35						.06	.02	.08							.22		.24	.40	.02	.15	.41	.95	.01			T.		.05	.05	1.78
Milford.....	Delaware.....		.13						.11	.28		.15						.16	.02					.38		.33	.08	.02					4.05
Montrose.....	Susquehanna.....	.09	.36						T.	.67		.04						.21		.09	.33				.18	.23	.09				.28	.05	1.44
Mountain House.....	Juniata.....								.15			.28	.05					.20		.08		.33			.56	1.80	.25	T.			.26	T.	5.03
Muncy Valley.....	Susquehanna.....	.33	T.						.63									.48		.72				.59	.50	.87	.09						2.88
New Germantown.....	do.....		T.						.11		.09	.15						.13				.44		.59	.50	.87	.09						2.57
Ottsville.....	Delaware.....		.21						.19	.23		.06						.29		.18	.38						.04			.01	T.		2.13
Philadelphia (I).....	do.....		.25						.21	.05	.03	.12	.07					.24		.80	T.			T.		2.18	1.09	.17					5.68
Pocono Lake.....	do.....		.30						.16		.74	T.						.18		.82					1.48	.15						3.04	
Point Pleasant.....	do.....		.12						.16	.08		.05						.22			.82											6.83	
Pottsville.....	Schuylkill.....		.06						.22	.35		.04						.22		.58	1.08	.01	.03	.83	.41								2.65
Reading.....	do.....	.41							.37	.05	.08	.07	.01					.14		.32	.02			T.	1.52	.04	T.			.10	T.		2.62
Renova.....	Susquehanna.....	.08	.32						.04	.57	.03							.24		.28	.01		.01	.90	.37	.16	.05		.02		.02	2.96	
Scranton.....	do.....		.26						.18	.29		.09						.36		.21	.74			.39	.46							2.97	
Seisholtzville.....	Schuylkill.....		.25						.04	.08		.13						.20		.08	1.10	.02	.01	1.20	1.26	.25				.07		5.27	
Selinsgrove.....	Susquehanna.....		.83						.29	.09		.12	.05					.30		.02	.65			.55	.10	.03						2.26	
Shawmont.....	Schuylkill.....		.15						.29	.13								.35			.84				2.11	.15						3.89	
Smiths Corners.....	do.....		.11						.29	.13								.37		.09	.97			.05	.49	.08					.04	2.78	
Spring Mount.....	do.....		.17						.25	.10	.05	.11	.10					.35															
State College.....	Susquehanna.....	.06	.69						T.	.77	.03	.06						.19		.23	.20	T.	.02	.75	.65		T.		.10	T.		3.17	
Towanda.....	do.....	.24	.36						T.	.33	.01							.10		.08	.05	T.		.51	.58	.05	.03	.02	T.	.14	.06	2.56	
Wellshoro.....	do.....	.07	.92	.43						.18								.11		.19				1.80	.28	.09				.20		4.27	
West Chester.....	Coast.....		.21						.29	.12	.06	.23	.08					.24		.34	.38			.02	.37	1.06	.01	.01				3.42	
Wilkes-Barre.....	Susquehanna.....								.30	.05	.04							.32		.28	.10			.26	1.65	.36	.30	.02			T.	3.36	
Williamsport.....	do.....	T.	.61						.38									.18		.24	.32			.70	.23				.05	T.		2.80	
New Jersey.																																	
Asbury Park.....	Coast.....			.13					.10	.28		.04	.10					.30		.32			.06	.62	.03				.10			1.48	
Atlantic City.....	do.....		.06	.18					.38	.19	.02	.22	.22		.04			.31		.01	.17			.03	.10				.05	T.		1.98	
Bayonne.....	do.....		T.	.02	T.				.13	.41		.02	.04		.05			.33		.36			.02	.01	.28				.02	.02		3.25	
Belvidere.....	Delaware.....		.20						.10	.33		.35						.32		.92			.92										2.89
Bergen Point.....	Coast.....		T.	.05					1.12	.47	T.	.04	.01		.10			.37		.33		.03		.24	.09								3.22
Boonton.....	Passaic.....		.11						.04	.30	.16	.05	T.					.17	.08		.78			.03	1.01	.14		.05		.15			2.44
Bridgeton.....	Coast.....		.43						.40	.15	T.	.30	.25					.42		.18			.08	.08	T.							2.01	
Burlington.....	Delaware.....		.26						.12	.16	.03	.12	.02					.37		.32	.03	T.	.04	.44									2.27
Canton.....	Coast.....		.25						.23	.06		.68						.31		.15			.59	T.	T.								1.88
Cape May.....	do.....	.01	.25	.07					.27	.09	.34	.06	.03		T.			.19		.04	.06			.24	.23							3.56	
Charlotteburg.....	Passaic.....		.15						.07	.64	.04							.25		.17			.09	2.18								.04	2.96
Chatham.....	do.....		.10						.08	.30	.08	.10	T.		.08			.30	.05		.65	.10		.05	.09								2.46
Clayton.....	Coast.....		.19						.48			.60						.31		.34		.05	.49										2.86
College Farm.....	do.....		.07						.12	.08		.04	.03		T.	T.		.35		1.06		.03	.01	1.00		.07							3.85
Culvers Lake.....	Delaware.....		.21						.14	.45		.17						.29		.96			.05	1.32		.06				.23	.06	4.25	
Dover.....	Passaic.....		.14						.41	.10								.26		.65			.10	.27	.20								2.42
Elizabeth.....	Coast.....		.40						.49		.05	T.						.40		.81		.05		.45	.05								

TABLE 2.—Daily precipitation for May, 1910. District No. 1—Continued.

Stations.	River basins.	Day of month.																															Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Maryland—Cont'd.																																			
Cheltenham.....	Coast.....				.28				.14	.03		.05	.61							.18		T.	.34	T.	.42		.33	.38				.06	.17	2.90	
Chester.....	do.....								.25	.10		.20	.52										.27	.03			.25	.63	T.			T.		2.21	
Chestertown.....	do.....								.11	.03	.13	T.	.16		T.						.10		.19	.22	.09		.26	.70	T.			T.		2.21	
Chewsville.....	Potomac.....		.22						.30	.03	.02	.30	.33							.01		.24	.46	.33	.03	.30	.09	.05						.04	4.27
Clear Spring|||.....	do.....							T.	.06	.55		.03	.28									T.		.40	.56	.36		1.06	.93	T.					3.47
Coleman.....	do.....		.36						.30	.03	.02	.30	.33									.24	.46	.33	.03	.30	.09	.05							3.94
College Park.....	do.....			.30					.45			.13	.53								.21	T.	.87	.33		.75	.27				.10			3.15	
Cumberland.....	do.....								.04	.25		.02	.28			T.	T.				.23		.35	T.	.70		.90	.28	T.			.08	.02	3.63	
Darlington.....	Coast.....		.30	.01					.28	.07		.23	.15							.15		.26	1.15		.02	.87	.10				.04		T.	3.15	
Denton.....	do.....			.33					.20	.04		.17	.33							.17		T.	.16		.10							T.		1.70	
Easton.....	do.....			.36					.27	.02		.17	.23							.19		.09	.13				.11	.11				.11	.15	1.99	
Emmitsburg.....	Potomac.....		.05						.08	.18	T.	.22								.33		.02	.26	T.	.13	T.	.51	.04			.03	T.		3.57	
Fallston.....	Coast.....		.32	.02					.27	.10	T.	.30			T.					.19		.24	1.34	T.	.03	.10	.90	.06	T.		T.	T.	T.	2.52	
Frederick.....	Potomac.....		T.	.61					.20	.05	.04	.05	.17							.15		.26	.85	.15	.05	.20	.33	T.			.01	T.		3.29	
Frostburg.....	do.....								.42			.38	.27							.32		.20	.26	.50	.09	.38	.21	.01			.13	.10		2.52	
Great Falls.....	do.....			.33					.13	.10		.08	.50	.08						.05		.20	.03	.20		.35	.30				.13	.02		2.56	
Green Spring Furnace.....	do.....							.17	.60			.27								.05		.22	.03	.30		.10	.60	.22						2.43	
Keedysville.....	do.....		T.						.11	.03	T.	.10	.15		T.					.12		.15	.47	.94		.23	.13				T.	T.		2.90	
Lake Montebello.....	Coast.....		T.	.59					*	.24		.20	.35		T.					.13		.16	.22	T.	.04	.49	.48				T.	T.		3.52	
La Plata.....	do.....		.28						.35			.04	.34							.33		.15	.54	.31	.70	.32					.09	.07		2.36	
Laurel.....	do.....			.04					.25	.14		.13								.20		.60	.32	.05	T.	.37				.14	.12			2.10	
Monrovia.....	Potomac.....		.39	.03					.18	.06	T.	.06	.22							.14		.02	.31	.07	.02	.23	.23				.14			3.03	
Pocomoke City.....	Coast.....			.15					.33	.56				.32						.56			.08		.17		.78		.08			T.		2.05	
Porto Bello.....	do.....		.30						.75					T.							T.	T.	*	.50		.50	T.					T.		4.59	
Princess Anne.....	do.....		.43					T.	.72	.18		.22	.25							.33		T.	.20	T.	.18	.84	.65	.30			.05	.24		2.93	
Rockville.....	Potomac.....		.58	.03					.30	.15		.07	.54								.01	.40	.01	.26	.18	.20					.15	.03		4.00	
Salisbury.....	Coast.....			.12					.60	.17		.27	.22							.30		.01	.07		.40		.50	.50	T.			.02	.22	2.10	
Sanatorium.....	Potomac.....		.20	T.					.09	.03		.22	.19							.16		.05	.22	.01	.20		.63	.02			.07	.01		1.57	
Solomons.....	Coast.....		T.	.16			.02		.20			.08	.06							.13		.02	.01	.09	.11	.09	.31	T.	.03		.22	.05		2.49	
Suffernville.....	do.....		T.	.28					.23	.16		.28	.47								.21	.22	T.	.14	.02	.23	.20	T.			.05	T.		3.60	
Takoma Park|||.....	do.....			.28					.27	.08			.53	.16						.15			.70		.18		.55	.60			.10				
Taneytown.....	Potomac.....																																		
Towson.....	Coast.....		.30						.20	.05		.22	.29							.08		.08	.09	T.	T.	1.06	.11			.01	T.			2.49	
Van Bibber.....	do.....		.40						.31	.10	.01	.28	.27							.22		.35	1.91	.02		.16	.60	.09			.03			4.75	
Westernport.....	Potomac.....								.08	.40	.02	.25										.32	.06	.05		.91	.08	.07			.21			2.45	
Woodstock.....	Coast.....			.62					.04	.21		.13	.36		T.					.14		.10	.31	T.		.08		.75	.10	.01		.12	T.	2.97	
Delaware.																																			
Delaware City.....	Coast.....		T.		.40				.18	.23		.28	.13							.33			.51	T.	.09		T.	.28						2.43	
Dover.....	do.....		.19						.12	.30	.05	.25	.15							.08		.11	.09		.10	.09	.07			.04	.12			1.76	
Millford.....	do.....		.43						.20	.04		.23	.16		T.					.16		.20		.03		.29	.32				T.			2.08	
Millboro.....	do.....			.43					.33	.31	T.	.18	.06		.03					.19		.13		.05	.55	.38								2.64	
Seaford.....	do.....			.29					.31	.07		.05	.15		.01	T.				.19		T.	.09	T.	.05		.56	.82				.07		2.66	
District of Columbia.																																			
Washington.....	Coast.....		.26	.02				.14	.12	.09	T.	.13	.48							T.	.09		.68	T.	.25	T.	.43	.32	.06		.31	.03	.02	3.43	
Virginia.																																			
Culpeper.....	Rappahannock.....		.16						.21	.05		T.	.78							.14		.10	.37	.06	.31	.38	.21				.04	.15		2.86	
Dale Enterprise.....	Shenandoah.....		.10					.32	.02			.10	.70							.12		.23	.10	.12	.17	.18	.42			.27	.01			2.89	
Doswell.....	Coast.....																																		
Eastville.....	do.....		.26					T.	.53	.11			.05						.30		.30						.27	.80	.30					2.92	
Fredericksburg.....	Rappahannock.....		.12						.26	.02		T.	.12							.14		.07	.16	1.55	.04	.41	.14	.13	.01		.16	.09		3.42	
Lincoln.....	Potomac.....		.45						.39			.13	.36							.10		.18			.23	.54								2.38	
Mount Weather.....	do.....		.53	.01			.22	.13	.01	T.	.12	.38			T.					.02		.15	.07	.04		.27	.42	T.			T.	.03	T.	2.40	
Nokesville.....	do.....																																		
Quantico.....	do.....								T.				1.60									T.	.42	.87		.27	.31				.70	T.		4.17	
Shenandoah.....	Shenandoah.....																																		
Staunton.....	do.....		.08					.22	.09		T.	.31	.12							.11		.26	.07	.55		.28	.11			.38	T.			2.58	
Stephens City.....	Potomac.....		T.	.13				.04	.23	.11		T.	.31								.25		.03	.07	.15	.51	.21			.09				2.13	
Waraw.....	Rappahannock.....							.05	.40	.08		T.	.12	.08						.26		.06	.18	.65	.36		1.20	.01			.22	T.		3.61	
Woodstock.....	Shenandoah.....		.01	.14			.07	.22	.12			.08	.40		.02					.09		.31	.03	.02	.26	.21				.08				2.06	

Date.	Maine.												Massachusetts.												Providence, R. I.				Connecticut.			
	Eastport.		Greenville.		Orono.		Portland.		Presque Isle.		Rumford Falls.		Concord, N. H.		Amherst.		Boston.		Middleboro.		Nantucket.		Providence, R. I.		Cream Hill.		Hartford.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
1.	49	39	57	33	61	34	53	41	54	28	58	42	62	40	66	45	58	46	55	45	50	43	58	42	63	43	68	48				
2.	45	39	46	38	61	34	47	40	57	34	50	44	58	40	72	42	51	44	64	34	51	42	60	41	65	39	68	44				
3.	46	40	47	37	57	45	49	40	47	42	48	41	50	42	52	43	53	46	60	42	58	42	57	44	72	43	70	46				
4.	42	34	41	35	37	37	46	41	45	32	48	41	50	42	52	43	49	45	56	45	49	44	52	43	52	38	54	46				
5.	36	31	45	31	42	35	46	38	40	33	49	37	52	35	55	38	47	41	48	41	47	37	48	41	53	34	55	40				
6.	44	31	48	26	54	29	52	34	45	27	54	30	57	29	62	31	62	40	59	28	55	37	61	38	58	33	60	40				
7.	57	36	54	24	61	26	62	37	62	25	58	30	67	33	69	59	70	47	70	28	58	43	71	43	62	38	71	44				
8.	61	40	69	32	71	32	64	40	68	31	72	37	76	39	70	46	76	56	72	42	60	48	70	52	63	40	65	52				
9.	47	43	58	41	71	47	58	48	67	43	59	46	62	53	62	55	64	56	56	52	55	49	59	52	55	44	62	55				
10.	69	44	55	40	61	47	64	51	56	43	60	45	64	45	64	48	68	55	67	50	62	49	66	53	65	45	67	50				
11.	55	43	48	35	62	38	62	45	57	37	56	42	62	41	61	46	66	52	65	47	57	48	66	49	58	41	66	49				
12.	54	39	50	34	61	32	56	43	56	29	59	43	64	32	66	36	61	48	64	37	51	43	63	48	59	39	64	46				
13.	58	40	52	33	63	34	53	40	57	30	56	43	58	37	64	39	55	46	62	36	55	44	62	44	62	35	64	43				
14.	56	40	55	41	64	41	60	43	60	31	58	44	60	43	62	43	58	47	62	34	56	46	61	44	54	38	59	45				
15.	56	43	55	41	63	43	58	45	68	25	58	44	60	36	62	40	60	44	61	32	59	48	62	42	58	35	62	38				
16.	63	41	66	30	72	31	65	46	75	34	69	36	69	37	70	35	64	47	65	34	60	49	66	45	63	38	67	42				
17.	56	40	74	35	76	33	69	49	72	44	74	40	75	37	74	38	74	50	75	33	68	48	73	49	62	39	73	47				
18.	52	42	65	44	75	35	57	48	60	44	69	40	58	45	62	45	65	50	67	36	59	47	61	47	61	44	63					

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 1—Continued.

Date.	New Jersey.								Martinsburg, W. Va. &c.		Maryland.								Washington, D. C.		Millsboro, Del.		Virginia.					
	Atlantic City.		Hightstown.		Newton.		Phillipsburg.				Baltimore.		Darlington.		Frederick.		Westernport.						Culpeper.		Fredericksburg.		Staunton.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1...	65	49	77	51	70	44	73	48	84	52	73	53	77	55	80	57	90	53	79	56	73	50	86	57	90	57	87	54
2...	54	48	80	43	72	39	69	44	75	51	63	51	69	48	73	51	84	50	68	52	58	50	76	53	74	53	85	54
3...	66	51	77	51	77	49	75	52	85	53	71	56	73	52	81	53	81	52	83	53	90	49	87	51	90	53	86	56
4...	61	51	71	50	69	44	55	46	67	49	64	50	63	47	68	47	61	47	65	49	70	49	74	52	77	52	66	50
5...	57	42	63	36	61	33	61	38	68	39	62	44	62	39	65	37	61	30	62	42	65	39	63	38	65	41	64	34
6...	63	42	65	31	65	33	65	36	70	35	65	44	65	37	67	35	65	28	64	41	67	36	65	36	66	38	65	31
7...	66	48	73	35	73	38	72	40	74	35	72	47	71	38	71	37	68	31	70	39	73	40	69	34	71	35	65	36
8...	57	54	65	51	63	43	66	48	78	38	60	57	68	55	74	55	74	51	74	56	73	55	76	55	79	55	73	49
9...	63	55	77	57	73	56	74	56	73	57	72	59	71	55	71	57	68	54	69	57	75	58	70	55	74	62	65	56
10...	70	54	71	49	70	48	70	51	77	49	73	56	72	52	74	52	76	47	75	53	76	41	78	50	80	48	77	47
11...	58	52	61	50	65	44	64	48	66	50	63	54	63	52	66	55	70	53	62	57	66	52	68	55	75	58	78	54
12...	56	48	66	48	68	44	68	48	69	55	63	48	64	47	66	48	65	45	60	49	56	50	63	46	65	49	54	48
13...	58	46	67	37	64	35	63	40	66	37	64	46	61	43	63	39	57	33	61	44	64	45	67	40	64	42	57	34
14...	58	45	65	41	63	36	63	42	57	43	59	49	59	43	58	41	55	36	57	45	63	37	58	38	60	40	54	35
15...	57	46	65	41	63	34	62	42	66	43	58	47	63	43	61	41	63	31	59	41	62	44	63	41	65	42	64	31
16...	62	44	73	36	70	34	73	37	73	34	66	44	70	37	67	34	68	33	67	40	63	35	71	34	69	37	66	36
17...	62	47	75	36	71	37	74	40	78	36	68	48	69	37	73	39	72	38	71	42	70	36	73	39	75	38	70	40
18...	72	54	72	47	68	46	70	48	75	42	74	56	73	51	74	52	70	63	75	55	78	44	78	53	80	54	74	56
19...	79	53	80	49	76	48	78	48	86	47	80	57	82	47	82	45	83	41	82	47	83	47	82	45	84	46	80	44
20...	66	59	84	49	78	54	81	50	75	47	75	61	75	55	74	54	77	38	76	56	72	54	70	51	75	58	70	51
21...	71	59	85	62	80	60	81	62	86	57	82	67	78	63	82	62	84	58	82	66	80	64	85	64	86	66	80	56
22...	63	54	74	55	67	55	64	55	83	60	68	60	67	59	73	59	81	56	72	59	67	57	79	58	85	59	81	56
23...	63	55	73	55	65	53	71	54	83	59	78	59	78	56	80	58	87	63	85	59	87	57	85	60	89	63	83	61
24...	68	59	89	51	83	61	87	63	91	58	85	65	83	59	87	59	83	54	87	63	87	65	84	59	87	64	82	62
25...	63	58	79	65	75	62	77	61	83	60	79	63	76	61	81	61	77	63	81	58	77	63	81	63	86	63	78	60
26...	77	59	77	57	74	52	76	54	79	54	74	58	73	55	72	55	67	48	72	56	80	59	75	52	76	54	72	47
27...	68	52	69	45	61	44	65	47	69	47	63	54	61	47	68	48	63	41	71	49	71	53	69	45	72	48	72	42
28...	77	59	79	44	77	44	77	53	79	49	79	54	78	49	78	49	77	38	76	51	78	48	79	44	79	50	79	42
29...	82	65	84	46	83	51	85	59	88	48	84	58	81	59	83	53	83	41	82	55	86	51	85	47	87	49	84	45
30...	78	58	89	55	75	53	75	56	75	56	75	60	74	58	73	48	74	54	78	62	78	62	76	56	77	58	72	56
31...	65	54	67	50	59	45	62	47	57	50	62	51	72	49	59	50	62	48	62	51	70	59	66	51	65	49	57	50
Mns	65.2	51.6	73.3	47.5	69.9	45.7	70.8	48.4	75.3	48.1	70.4	54.1	70.6	49.3	72.4	49.6	72.5	45.3	71.5	51.5	73.0	49.7	74.0	49.1	76.4	51.0	72.3	47.5

Climatological Data for May, 1910.

DISTRICT No. 2, SOUTH ATLANTIC AND EAST GULF STATES.

CHARLES F. VON HERRMANN, District Editor.

GENERAL SUMMARY.

The month of May, 1910, was characterized by a general deficiency in temperature and great irregularity in the distribution of rainfall. While the average deficiency in temperature for the entire district was only about 2°, in several States the month ranks among the coolest Mays on record. Judging by the State averages, in South Carolina, for example, only May, 1895, 1897, and 1909 were cooler than the current month; in Georgia during a period of 20 years only May, 1897, and 1909; in Mississippi during 22 years the State average temperature for May was lower than for the current month in only 2 instances, namely, in 1907 and 1909. Numerous illustrations of the same fact might be taken from the records of individual stations. At Montgomery, Ala., for instance, during a period of 38 years, only May, 1907 and 1909, were somewhat cooler than the present month; at Birmingham, in 15 years, only May, 1907, etc. The same condition prevailed as far south as the Gulf coast; at Mobile, during a period of observations extending over 40 years, May was somewhat cooler than the current month only 4 times. The coldest weather for the month occurred quite generally on the 14th to 15th, with light to killing frosts in western Virginia and North Carolina and in Georgia and Alabama. In Virginia and North Carolina minimum temperatures a few degrees below freezing were recorded.

The rainfall was moderately below the normal in Virginia, Florida, Alabama, and Mississippi, and slightly above normal in North Carolina, South Carolina, and Georgia. In these States, however, the excess was brought about by unusually heavy rains over restricted areas. In fact the irregularity in the distribution of rainfall was remarkable in some States. In northern Georgia the rainfall was unusually heavy, the monthly totals for May, 1910, are the largest on record in 20 years at Adairsville, Clayton, Dahlonega, and Ramsey, the maximum fall amounting to over 11 inches. The other extreme is noted in south Georgia where the rainfall was very small and drought prevailed at the close of the month. At the following stations in southern Georgia the rainfall for May, 1910, is the smallest received during the corresponding month in the past 10 to 20 years, viz, Blakeley, Fort Gaines, Lumpkin, and Valona. In South Carolina also a marked deficiency in rainfall occurred near the coast (Charleston, 1 inch), but an excess of over 8 inches occurred in the northwest portion of the State (Liberty, 16 inches). The effect of altitude in causing the condensation of moisture is distinctly revealed in these cases, the position of the areas of low atmospheric pressure during the month being favorable for the ascent of warm, moist air along the southern and eastern slopes of the Blue Ridge Mountains, with consequent condensation by mechanical cooling.

Thunderstorms were quite frequent during May, occurring on every day of the month except the 1st, 2d, 14th to 16th, and 28th. In several instances severe local storms, with high winds and hail, caused considerable damage to property.

The atmospheric pressure was highest in all the States bordering the Atlantic Ocean on May 17, with a maximum for the district of 30.44 inches at Richmond and Norfolk, Va. In the Gulf States the highest pressure occurred on May 28. The lowest barometer was observed in the Atlantic States on May 31, and in the Gulf States on the 24th, with a minimum of 29.60 inches at Richmond, Norfolk, and Wilmington. The district was under the influence of about 10 barometric depressions, most of them not well defined and of very erratic movement. The depression central near St. Louis on the morning of May 7 with a pressure of 29.7 inches was accompanied by severe local storms in North Carolina. Severe hail and wind

storms occurred also at many places in Georgia on the 12th, with the center of lowest atmospheric pressure off the coast of Virginia (Norfolk, 29.74 inches), but the direction of the winds plainly indicated a secondary disturbance over northern Georgia on the morning of May 12, not revealed by the isobars on the morning weather map of that date. Severe local storms again occurred in North Carolina on May 24 in the southeast quadrant of a depression central over Lake Superior, with a pressure at Marquette of 29.60 inches and a trough of low extending southward to the Gulf coast.

As a whole, conditions during May were not favorable for the rapid growth of vegetation. The weather was too cool, the rainfall unevenly distributed, some sections suffering from drought, while in others the land could not be cultivated on account of excessive rainfall, and there was much cloudiness in the Gulf States.

TEMPERATURE.

The mean temperature for May averaged only 2° below the normal for the district, yet, as stated in the general summary, in several States the month ranks among the coolest Mays experienced in many years. The State averages show deficiencies in mean temperature varying from 0.4° in Florida to 2.7° in Mississippi. At a very few stations in southern Georgia and in South Carolina, and generally in the region of central Florida lying between Tampa and Jacksonville the temperature was slightly above the normal. As a rule the deficiencies were under 2° along the east Gulf and Atlantic coasts, east of a line drawn from Pensacola, Fla., to Richmond, Va., while to the west of that line the deficiencies gradually increased to over 4° in the mountainous portions of Virginia, South Carolina, and Georgia, and in northern Alabama and Mississippi.

The average temperature for the entire district, computed from the records at 307 stations, is 69°. The range in monthly mean temperature was somewhat greater than in April, namely, from 55.4° at Hot Springs, Va., to 78.4° at Key West and Miami, Fla. The monthly mean was not as high as 70° at any station in Virginia or North Carolina, and not below 70° at any point in Florida. The range in the monthly means was greatest in Georgia, namely, from 75.4° at Valdosta to 61.5° at Clayton, and least in Florida, from 78.4° at Key West to 71.5° at Molino. In Alabama and Mississippi the monthly mean temperatures ranged from 73° near the coast to 64° in the interior.

The periods of warm weather during May were of very short duration. The first 3 days of the month were quite warm with maximum temperatures slightly above 90° at many places. In Virginia and North Carolina this was the warmest period of the month, the maximum on the 3d reaching 92° at Cape Henry and Diamond Springs, Va., and 96° at Monroe, N. C. A long period of cool weather followed from the 4th to the 20th, interrupted by one warm day only, the 11th. On some days during this period the mean temperatures ranged from 10° to 15° below the daily normals, and light to heavy frosts occurred on several dates. In Virginia light frosts occurred east to the coast line on the 5th and 6th, and many stations reported heavier frosts on the 13th to 17th, with considerable damage to gardens, especially on the 15th. The 14th or 15th was generally the coldest day throughout the district, and frosts occurred in the western portions of North Carolina and in northern Georgia, Alabama, and Mississippi. The minimum temperature in the district was 26° on the 6th at Hot Springs, but in all other States the minimum occurred on the 14th or 15th (in Florida on the 18th), ranging from 29° at Mount Airy, N. C., to 33° at Diamond, Ga., and 41° at Milligan, Fla. As a rule, frosts caused comparatively little damage either to fruit or

gardens. Another moderately warm spell of brief duration prevailed on the 22d and 23d with maximum temperatures again above 90°. Walterboro, S. C., registered 99° on the 22d, and Huntington, Fla., 100° on the 23d. The remainder of the month was cool in the northern portion of the district, but another warm spell occurred in the south on the 28th to 30th, during which period the maximum temperatures for the month occurred in Georgia, Alabama, and Mississippi, namely, St. George, Ga., 100° on the 30th, Lucy, Ala., 98°, and Brookhaven, Leakesville, McNeil, Monticello, and Porterville, Miss., 94° on the same date. As a rule, these extremes of temperature were well within those registered during May in former years.

PRECIPITATION.

The normal precipitation for May in District No. 2 shows a comparatively small variation from 3.50 inches in Georgia to 4.50 inches in the Mississippi area. During May, 1910, the rainfall was slightly above the normal in North Carolina, South Carolina, and Georgia, the average excess for these 3 States being only 0.27 inch. However, this excess resulted entirely from heavy precipitation over very limited regions in each State. These restricted areas of heavy rainfall comprise the eastern portion of North Carolina within the coast line where the monthly totals at 9 stations ranged from 6.6 to 11.8 inches; a limited region, including the northeastern corner of Alabama, northern Georgia, western South Carolina, and the immediately adjoining portions of North Carolina in which the rainfall varied at 21 stations from 6 to over 16 inches. The greatest monthly totals in this section were: In Alabama, 7.17 inches at Maple Grove; in Georgia, 11.33 inches at Dahlongega; in South Carolina, 16.26 inches at Liberty; and in North Carolina, 12.63 inches at Rock House, Macon County. The amount at Liberty is the heaviest rainfall recorded at any station in South Carolina during May, and thus establishes a new record. The average rainfall for the region lying north of Atlanta, Ga., was more than 6 inches, a record exceeded only once before, namely, in 1901, when the average for the same section was 6.75 inches. At several places in northern Georgia the rainfall for May, 1910, was the largest on record. The following comparisons are of interest. Monthly total rainfall for May, 1910: Adairsville, 8.17 inches; Clayton, 11.14; Dahlongega, 11.33; and Ramsey, 8.90. Previous largest amount for May, Adairsville, 6.50 inches in 1901; Clayton, 6.98 in 1905; Dahlongega, 10.39; and Ramsey, 7.08, both in 1901. At Rome, Ga., the total for the current month, 7.70 inches, was exceeded only once during the past 55 years, namely, by 9.40 in May, 1866. A third region of moderately heavy rainfall of from 6 to 8 inches is found in southeastern Mississippi, with the largest amount, 8.35 inches at Monticello.

Over by far the larger portion of nearly every State in the district the rainfall was below the normal, the deficiencies being greatest in Virginia and Florida where the State averages show deficiencies, respectively, of 1.04 and 1.39 inch. The least rainfall occurred this month in the lower basin of the Chattahoochee River where the maximum fall occurred in April. In western Florida traces only were received at Apalachicola and Bonifay. In southeastern Alabama the smallest monthly total was 0.47 inch at Lucy; in Georgia, 0.20 inch at Valdosta. The rainfall was so small in the southern half of Georgia that drought began to be severe toward the close of the month. In marked contrast to conditions in the northern half of the State the records of small amounts of precipitation were broken at several places in southern Georgia. For example, the amounts for the current month at a few places were as follows: Blakeley, 0.76 inches; Fort Gaines, 0.25; Lumpkin, 0.29; and Valona, 0.70 inch. The least previous records were: Blakeley, 0.96 in 1891; Fort Gaines, 0.80 in 1898; Lumpkin, 0.64 in 1897; and Valona, 0.78 in 1898.

The first week of May was generally fair, except that irregularly distributed showers fell on the 3d-4th in the northern, and

on the 4-5th in the central portions of the district. Under the influence of a rather extended barometric depression that lingered in the Ohio Valley, the first period of general rains occurred from the 6th to 9th. The rainfall was quite heavy in the Carolinas and in northeastern Georgia; some of the greatest amounts in 24 hours were: In North Carolina, Newbern, 5.35 inches; Charlotte, 2.67; Monroe, 2.65; Pinehurst, 2.50; Sloan, 3.82; Snow Hill, 3.37; Southern Pines, 3.00; and Willard, 3.60 inches; in South Carolina, Greenville received 8.20 inches; Liberty, 6.90 (9.00 in 48 hours on the 7-8th); Allendale, 2.93; Clemson College, 3.11; and Spartanburg, 5.15 inches. In Georgia, 2.85 inches fell at Clayton and 2.90 inches at Toccoa. Light rains occurred in the district on the 11th and 12th which were associated with a slight barometric depression extending from Florida to Maine. In Virginia, the Carolinas, and Florida a period of fair weather followed which lasted until the 20th, except that light showers fell on the 18th in Virginia and North Carolina. In Virginia and North Carolina the longest period of rainy weather prevailed from the 20th to the 26th; in Florida, from the 21st to the 28th; and in Georgia, Alabama, and Mississippi, from the 16th to the 25th. Local heavy rains occurred again at a few places during this period, the greatest amounts being 2.97 inches at Eastman, Ga., on the 24-25th; 3.25 at Tarpon Springs, Fla., on the 27th; 2.53 at Livingston, Ala., on the 21st; and 3.33 at Leakesville, Miss., on the 19th. Light showers occurred again at the close of the month. The following excessive rains in brief period of time were reported: Grasmere, Fla., 1.29 inch in 1 hour on the 29th, and Miami, Fla., 2.00 inches in 45 minutes on the 25th.

SEVERE LOCAL STORMS.

An unusually large number of thunderstorms was reported during May. Many were accompanied by hail and high winds and were quite destructive in character. Thunderstorms occurred on 24 days, with the maximum frequency on the 7th and 8th, 12th, and 22d to 25th, inclusive. Hail was noted at the greatest number of stations on the 8th, 12th, and 24th. In the aggregate the damage done by hail to crops was quite considerable.

A severe thunderstorm, accompanied by heavy hail, occurred in Adams, Leake, and Noxubee counties, Miss., on the night of May 7. Near Macon the hailstorm was very severe and the winds of great violence. Large trees were uprooted or broken off; portions of houses were blown away and barns were demolished. The path of greatest destruction was a mile or more in width. The damage done to houses in Macon was only about \$500, but the damage to shade and forest trees and to farm buildings was probably much greater. The rain lasted only 15 minutes during which half an inch fell. The storm extended east as far as Bigbee Valley.

A series of severe local storms occurred on the 12th in Georgia under rather peculiar conditions, for the center of the storm area was in the vicinity of Norfolk, Va., where the lowest pressure at 8 a. m. was slightly below 29.74 inches. The storms occurred in the southwest quadrant of the main disturbance. Severe wind and hail storms occurred on the afternoon of the 12th at Atlanta, in the vicinity of Augusta, and at Sparta, Eatonton, Covington, and other points in Georgia. The storm at Atlanta for 15 or 20 minutes was very severe. Hail began at 1:15 and continued for 15 minutes; the wind rose to a velocity of 60 miles an hour and the rain descended in torrents. Fortunately, the hailstones were not larger than small marbles, though very abundant; the temperature was high and the hail melted soon after it fell. The damage done was limited to the immediate vicinity of Atlanta. Fruit and shade trees were stripped of their foliage, small limbs were broken off; many gardens were ruined and truck crops suffered severely. Comparatively few window glasses were broken and the damage in this respect was small. Some chimneys were blown down and roofs damaged. A similar storm in the vicinity of Augusta

caused much damage to corn and cotton. A Southern Railway train had all the windows on the windward side broken in.

Similar storms occurred in North Carolina on May 24. At Raleigh a severe storm passed over the city between 3:30 and 4 p. m. The rainfall was 1.09 inch and the wind reached a velocity of 39 miles an hour. A few small buildings were unroofed and trees were blown down at various points, but the damage was comparatively small. Severe thunderstorms occurred at Rockingham and Wake Forest on the same date.

RIVER CONDITIONS.

At a large number of stations the mean river stages fell much below the normal stages for May. The rivers of Virginia and North Carolina experienced no important changes during the month. The Cape Fear at Fayetteville rose from 4.3 feet on the 8th to 21.0 feet on the 10th, followed by a fall to 8.5 feet on the 13th. In South Carolina the stream flow was about an average for the month in the Broad, Catawba, Santee, and Saluda rivers, but was decidedly below normal in the Pedee and Waccamaw. A marked rise took place in the up-country streams from the 9th to the 14th, and later, as the water approached the coast in the low country portions of the river basins. The Saluda River rose to slightly above flood stage on the 11th at Chappells, but no damage resulted. The Santee rose to 1 foot above flood stage at Rimini on the 14th. The moderate rises in the Broad, the Catawba, and the Great Pedee rivers were beneficial to water-power interests.

The average stages in the Pedee and Waccamaw rivers, as well as in the rivers of Georgia, were unusually low. The following comparative records illustrate this marked feature of the river conditions during May, 1910:

TABLE 1.—Mean river stages for May, 1910, compared with average stage.

Stations.	May, 1910.	Average for May.	Length of record.
	Feet.	Feet.	Years.
Pedee River.			
Cheraw, S. C.	3.6	5.2	18
Smiths Mills, S. C.	2.9	7.6	15
Effingham, S. C.	4.1	5.2	18
Kingstree, S. C.	0.7	4.3	17
Waccamaw River.			
Conway, S. C.	1.6	3.2	17
Flint River.			
Albany, Ga.	1.4	4.4	17
Bainbridge, Ga.	4.5	7.1	9
Woodbury, Ga.	0.9	1.2	10
Chattahoochee River.			
Eufaula, Ala.	5.9	6.3	17

In Alabama the Coosa watershed received on an average by far the largest amount of rainfall, and the Chattahoochee the least. The heavy rains on the 20th and 21st caused a rapid rise in the south-flowing rivers of the State during the last decade, but no very high stages were attained. In Mississippi also the river stages were much below the normal.

MISCELLANEOUS PHENOMENA.

The prevailing winds were from the southwest in the Atlantic States, except in Florida where the southeasterly winds were most frequent. In Alabama and Mississippi southerly winds prevailed. Comparatively few stations reported maximum winds exceeding 40 miles an hour. At Columbia, S. C., during a brief squall on the 22d, the wind reached for 5 minutes a velocity of 52 miles an hour. At Atlanta, during the thunderstorm on the 12th, a velocity of 60 miles an hour from the northwest was registered. Savannah reported 43 miles from the southwest on the 24th; Macon, 40 miles from the southwest, on the 22d; Augusta, 40 miles northwest, on the 12th; Jacksonville, 48 miles from the south, on the 8th; and Pensacola, 40 miles north, on the 23d. The following regular Weather Bureau stations registered an average wind movement exceeding 10 miles an hour during the month: Hatteras, average hourly wind movement, 15.0 miles; Charleston, 11.0; Atlanta, 11.6;

Savannah, 12.4; Jupiter, 12.2; Pensacola, 17.9. The wind movement was very high at Pensacola.

The amount of sunshine was above normal over perhaps three-fourths of the district, but there was much less sunshine than usual in the mountainous portions, especially in northern Georgia. It was also below the normal in Mississippi. The number of clear days was almost exactly 15 in every State in the district; the number of cloudy days varied from 9 in Mississippi and 8 in Georgia to 4 in Florida and 5 in Virginia.

HALLEY'S COMET.

No special atmospheric phenomena of any kind were visible to the most attentive observer on May 18 when the earth was supposed to have passed through the tail of Halley's comet. It has been suggested, as an afterthought, that such an event may really be impossible. The tail of a comet is formed of most highly rarefied gas repelled from its nucleus by the repulsive force of the solar radiation, the particles being so small that gravitation is entirely overcome. The earth, though a dark body, has a very high temperature as compared with interplanetary space and it must necessarily be sending out in all directions at all times radiant energy differing only in intensity from that emitted by the sun. The repulsive force of these waves is quite sufficient to dissipate the extremely tenuous matter composing the tail of a comet and thus prevent its touching the earth.

A total eclipse of the moon was observed on the evening of May 23.

LOW WATERS IN THE RIVERS OF SOUTHERN MISSISSIPPI DURING THE SPRING OF 1910.

By FRANK MONTGOMERY, Observer, Meridian, Miss.

The months of March, April, and May, 1910, constitute the driest spring in southern and central Mississippi since 1871, with the sole exception of the similar period of 1898. Although no river gages existed on the Pearl and Pascagoula rivers prior to 1905, it is probable that, with the exception of 1898, these rivers were never before so low during the entire spring. From 1905 to 1909, inclusive, from 1 to 4 damaging floods occurred each spring. It is true that the flood stage was reached in the lower Pearl River this year, but no damage whatever resulted.

In 1909 the Pearl River at Jackson, Miss., was above the flood stage on 42 days during March, April, and May, and the heavy rains of the closing days of May and the first 2 days of June kept the river in flood until June 18. The average number of days that the Pearl River was in flood at Jackson during the spring months, from 1905 to 1909, inclusive, is 28. During the spring of 1910 the highest stage reached was 16.4 feet, or 3.6 feet below flood stage, and with the exception of 19 days, the river was less than half way from zero to flood stage. The fall being greater on the Chickasawhay River, the average number of days that the water was above flood stage at Shubuta during the 5 spring months, from 1905 to 1909, is 12. The highest stage reached in 1910, however, was only 15.4 feet, which is 9.6 feet below flood stage, and the river was less than half way from zero to flood stage on all but 4 days.

Table 1 gives the total rainfall and resulting river stages during the past 6 years (March to May) at Jackson, Miss., and Pearl River, La., on the Pearl River, and at Merrill, Miss., on the Pascagoula River and at Shubuta, Miss., on the Chickasawhay, which is joined by the Leaf River, just above Merrill, to form the Pascagoula.

Table 1 reveals most clearly the remarkable deficiency in rainfall in southern and central Mississippi and the resulting low stages in the rivers of the district. In every case the mean stage, as well as the highest and lowest, are the least on record during the period of 6 years. While the growth of vegetation was retarded, there was in general ample moisture in the ground for the needs of vegetation except during one or two short

periods, and, as compensation, farmers were able to thoroughly cultivate crops and kill grass and weeds.

On the whole, the dry spring was beneficial to the extensive logging interests of southern Mississippi. While rafting has been impeded to some extent, the low water has enabled lumbermen to work with scarcely any interruption in the low lands where inundations are ordinarily of frequent occurrence.

TABLE 1.—Total rainfall and resulting river stages on the Pearl and Pascagoula river systems during six successive spring seasons.

JACKSON, MISS. (Flood stage, 20 feet.)

Year.	River stages.			Total rainfall.
	Average.	Highest.	Lowest.	
	Feet.	Feet.	Feet.	Inches.
1905	13.0	21.3	6.5	16.10
1906	12.1	29.6	3.2	17.28
1907	12.8	27.3	3.0	18.66
1908	18.2	28.6	4.9	20.19
1909	18.5	35.3	5.8	22.98
1910	5.3	16.4	1.5	10.89

PEARL RIVER, LA. (Flood stage, 12 feet.)

Year.	Average.	Highest.	Lowest.	Total rainfall.
	Feet.	Feet.	Feet.	Inches.
1905				
1906				
1907	11.0	15.2	4.7	24.53
1908	12.3	15.5	8.0	14.88
1909	12.3	15.3	8.9	15.51
1910	7.8	13.3	4.3	4.99

SHUBUTA, MISS. (Flood stage, 25 feet.)

Year.	Average.	Highest.	Lowest.	Total rainfall.
	Feet.	Feet.	Feet.	Inches.
1905	8.1	24.1	3.0	16.22
1906	13.3	39.2	3.0	22.36
1907	16.0	34.5	4.4	21.98
1908	10.9	28.5	4.8	21.32
1909	12.3	43.0	2.2	29.43
1910	4.4	15.4	1.4	8.14

MERRILL, MISS. (Flood stage, 20 feet.)

Year.	Average.	Highest.	Lowest.	Total rainfall.
	Feet.	Feet.	Feet.	Inches.
1905	12.1	19.6	6.2	21.33
1906	11.3	21.6	3.3	18.14
1907	13.8	21.7	3.5	32.32
1908	12.9	20.4	5.9	17.50
1909	11.2	30.0	3.2	23.52
1910	5.1	15.0	0.4	5.38

STREAM FLOW OF THE OCMULGEE AND OCONEE RIVERS IN GEORGIA.

By W. A. MITCHELL, Observer, Macon, Ga.

Continuing the study of the stream flow of the rivers of Georgia, as begun in the March issue of the MONTHLY WEATHER REVIEW, the following records are given relating to the Altamaha River system. This system comprises the Altamaha and its 2 main tributaries, the Ocmulgee and Oconee rivers. Both tributaries rise in the north-central portion of the State and flow southeastward through narrow valleys, parallel most of the way, and unite about 130 miles from the Atlantic coast to form the Altamaha. River gages are maintained at Macon, Hawkinsville, Abbeville, and Lumber City on the Ocmulgee, and at Milledgeville and Dublin on the Oconee. The records at Hawkinsville and Lumber City are for only about 2 years and are not given.

A proper discussion of the stream flow of any river includes mention of the amount of rainfall and the manner of its occurrence, the temperature, and the topography of the country drained. As to topography, the upper portions of the basins of both the Ocmulgee and Oconee rivers lie among the hills, and there is considerable fall from their headwaters to what is known as the "fall line," which passes near Macon and Milledgeville and which marks the line of transition from the Piedmont Plateau to the Coastal Plain. In this upper portion of both rivers the fall is nearly 500 feet and there are many fine power possibilities, some of which are being utilized. From the fall line southward the slope is more gradual and the flow of the river slow and regular.

A knowledge of the effect of topography is very essential in forecasting the flow of these streams because, whereas a rise will move from the upper portions of both rivers to the fall line, one-third the length of the valley, in 36 to 48 hours, it will require nearly 3 weeks to move over the other two-thirds of the distance to the coast. The mean river stages for 2 stations on the Ocmulgee and for 2 on the Oconee are given in the tables, together with data in regard to the length of record, etc.; also the normal rainfall for both basins as determined from 12 stations.

Mean stages of the Ocmulgee River.

MACON, GA.

This station is 203 miles from the confluence of the Ocmulgee and Oconee rivers and 333 from the coast. Record, 10 years. Flood stage, 18 feet.

Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
4.7	8.0	7.6	6.3	4.4	5.0	4.0	4.6	3.3	2.6	2.7	4.9

ABBEVILLE, GA.

This station is 91 miles from the confluence of the Ocmulgee and Oconee rivers and 224 from the coast. Record, 6 years. Flood stage, 11 feet.

Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
7.0	9.2	8.5	6.6	5.6	4.3	3.8	4.7	3.2	2.5	2.4	5.1

Mean stages of the Oconee River.

MILLEDGEVILLE, GA.

This station is 147 miles from the confluence of the Oconee and Ocmulgee rivers and 277 from the sea. Record, 6 years. Flood stage, 25 feet.

Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
5.4	7.4	6.7	5.1	4.1	4.2	4.2	5.2	3.2	2.8	3.0	5.2

DUBLIN, GA.

This station is 79 miles from the confluence of the Oconee and Ocmulgee rivers and 209 from the sea. Record, 10 years. Flood stage, 30 feet.

Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
4.9	8.7	7.9	6.1	3.2	3.5	2.5	2.9	1.8	0.9	1.1	3.6

Normal precipitation over Ocmulgee and Oconee basins.¹

Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
4.10	5.20	5.08	3.32	3.17	4.25	4.95	5.40	3.40	2.37	2.76	4.24

¹Computed from the normal rainfall at Athens, Abbeville, Atlanta, Covington, Dublin, Eatonton, Forsyth, Greensboro, Hawkinsville, Macon, Milledgeville, and Monticello.

The average rainfall is practically the same in the basins of both rivers. It contains two periods of maximum, one in February and March, and a second one in August. A period of minimum rainfall occurs in October and November, and another not quite so small in April and May. The highest average stage of water in both rivers is coincident with the period of maximum rainfall in February and March, but at the time of greatest summer rainfall only a slight average rise in the rivers occurs, showing the influence of temperature as increasing evaporation, as well as the greater absorption of moisture by plants in summer than in winter; the soil being in a state of cultivation also holds more water. Occasionally high stages are reached in summer. The highest stage ever recorded at Macon occurred in August, 1887, when a height of 24 feet was attained. Summer floods, however, are exceptional. At the time of the minimum rainfall in October and November very low river stages are reached and such conditions interfere seriously with traffic on the streams, which has to be suspended during the fall months.

Then, too, the character of the rainfall plays an important part in the flow of the streams. On account of the very narrow

valleys of both rivers heavy and sudden rains pass quickly into the channels and cause high stages.

Flood stages are quite frequent in the Ocmulgee, having been exceeded in every year except three at Macon since the establishment of the station in 1899. Below Macon flood stages are still more often reached on account of the nature of the valley and the wider fluctuations, the average stages being higher in winter and lower in summer.

The following are the highest and lowest stages recorded on both streams:

46—2

Stations.	Maximum stage.		Minimum stage.	
	Height.	Date.	Height.	Date.
Ocmulgee River.	<i>Feet.</i>		<i>Feet.</i>	
Macon	24.0	Aug., 1887	- 1.0	Oct. 5, 1904
Abbeville	17.5	May 2, 1909	- 1.0	June 17, 1898
Oconee River.				
Milledgeville	27.3	Apr. 27, 1908	0.1	Sept. 28, 1905
Dublin	25.8	Mar. 5, 1902	- 1.5	Oct. 26, 1904

TABLE 1.—Climatological data for May, 1910. District No. 2, South Atlantic and east Gulf States.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
Virginia.																				
Arvonia.	Buckingham.	350	6	63.4	- 2.2	88	1	34	6	38	3.07	- 0.73	1.16	0.0	13	11	19	1	sw.	Rev. Plummer F. Jones
Ashlan.	Hanover.	721	19	63.2	- 2.8	88	3	38	16	32	2.36	- 2.07	0.41	0.0	10	11	15	4	s.	E. L. C. Scott.
Buchanan.	Botetourt.	220	8								2.93		0.42	0.0	13					D. D. Boose.
Callville.	Brunswick.	250	16	63.7	- 2.5	90	1	39	16	30	2.81	- 1.21	0.79	0.0	7	20	10	1	s.	F. M. Gage.
Cape Henry.	Princess Anne.	20	36	64.3	+ 0.1	92	3	45	16	33	3.04	- 0.99	1.07	0.0	12	14	6	11	n.	U. S. Weather Bureau.
Catawba.	Roanoke.	1,760																		State Sanitarium.
Charlottesville.	Albemarle.	800	21	63.6	- 2.5	90	1	41	07	30	2.86	- 1.91	0.66	0.0	10	9	9	13	s.	Leander McCormick.
Clarksville.	Mecklenburg.	16									2.85	- 1.45	0.62	0.0	6					J. Henry Ligon.
Columbia.	Pluvanna.	246	12	63.0		89	1	35	6	40	2.93	- 1.31	0.68	0.0	11	15	10	6	nw.	Chesapeake & Ohio R. R.
Danville.	Pittsylvania.	413	10								2.14	- 2.03	0.73	0.0	8					C. G. Watkins.
Diamond Springs.	Princess Anne.	20		63.9		92	3	37	6	38	4.04		1.10	0.0	11	18	4	9		Virginia Experiment Sta.
Hampton.	Elizabeth City.	5	27	66.1	+ 0.4	89	3	46	07	33	3.43	- 0.37	1.02	0.0	9	20	5	6	sw.	Hampton Institute.
Hot Springs.	Bath.	2,195	18	65.4	- 4.8	82	27	26	07	38	2.40	- 1.89	0.76	0.0	11	13	13	5		James P. Scott.
Ivor.	Southampton.	87	1	64.3		91	3	35	77	43	4.63		1.24	0.0	11					N. & W. Ry., Exp. Farm.
Lameter.	Gooseland.	100									3.43		0.90	0.0	9	22	7	2		T. J. Davis.
Lexington.	Rockbridge.	1,060	33	58.5	- 4.6	87	1	32	15	42	2.77	- 0.97	0.32	0.0	13	19	7	5		Virginia Military Institute.
Lynchburg.	Campbell.	685	39	62.7	- 3.2	89	1	37	15	38	2.78	- 1.19	0.87	0.0	13	9	19	3	nw.	U. S. Weather Bureau.
New Castle.	Craig.	1,300	1								5.96		1.21	0.0	12					Miss J. L. Martin.
Newport News.	Warwick.	55	7	66.2		90	3	44	17	33	3.68		0.95	0.0	14	14	11	6	sw.	Ernest W. Sniffen.
Norfolk.	Norfolk.	91	40	65.2	- 1.3	90	3	45	6	30	3.48	- 0.63	0.85	0.0	10	15	9	7	s.	U. S. Weather Bureau.
Petersburg.	Dinwiddie.	60	23	66.0	- 1.0	90	3	39	07	34	2.08	- 1.68	0.45	0.0	8	22	4	5	w.	Central State Hospital.
Randolph.	Charlotte.	334	6								3.06		0.82	0.0	8					W. B. Spencer.
Richmond.	Henrico.	144	31	63.8	- 3.5	88	3	41	7	31	2.67	- 1.18	0.54	0.0	15	8	20	3	s.	U. S. Weather Bureau.
Rocky Mount.	Franklin.	1,130	16	61.3	- 4.8	89	17	29	15	43	3.47	- 0.28	0.69	0.0	11					G. W. B. Hale.
Roanoke.	Charlotte.	350	7	63.2		90	3	34	07	41	3.35		0.68	0.0	10	23	2	6	sw.	State Experiment Farm.
Spottsville (near).	Surry.	15	22	64.2	- 0.2	90	37	35	07	38	4.74	+ 0.54	1.36	0.0	13	13	7	11	sw.	B. W. Jones.
Williamsburg.	James City.	70	19	64.6	+ 0.2	88	23	39	147	35	3.65	+ 0.58	1.10	0.0	9	15	15	1	sw.	Eastern State Hospital.
North Carolina.																				
Beaufort.	Currier.	10	8	69.0		82	24	49	6	22	2.41		0.82	0.0	9	20	4	7	sw.	H. D. Aller.
Belhaven.	Beaufort.	4	1	68.1		93	27	36	6	38	9.81		2.95	0.0	11	15	7	9	nw.	W. S. Hopkins.
Brewers.	Wilkes.	1,950	13	61.7	- 3.7	93	2	31	15	44	3.69	- 0.42	0.94	0.0	13	13	15	3	w.	W. L. Brewer.
Caroleen.	Rutherford.	806	10	65.4	- 3.4	92	17	38	16	44	5.82	+ 1.99	2.46	0.0	9	9	14	8	sw.	S. B. Tanner.
Chalybeate Springs.	Harnett.	500	4	65.4		92	22	36	6	42	4.39		1.89	0.0	10	21	5	5	sw.	J. A. Smith.
Chapel Hill.	Orange.	500	52	66.4	- 1.6	91	1	38	15	36	3.39	- 1.13	1.30	0.0	9	18	9	4	sw.	Prof. A. H. Patterson.
Charlotte.	Mecklenburg.	773	34	66.4	- 2.0	89	1	41	15	29	4.26	+ 0.34	2.67	0.0	10	13	10	8	sw.	U. S. Weather Bureau.
Chimney Rock.	Rutherford.	1,150		64.2		91	1	36	15	40	6.49		2.55	0.0	12	20	2	9	nw.	Dr. L. B. Morse.
Clinton.	Sampson.	156	3	68.2		93	17	41	6	35	4.21		1.86	0.0	10	10	19	2	s.	W. T. Boyette.
Durham (near).	Durham.	406	1								3.48		1.38	0.0	8					Supt. Durham Water Co.
Eagletown.	Northampton.	66	5	65.6		90	27	39	6	35	5.04		0.94	0.0	10	18	7	6	sw.	J. T. Elliott.
Edenton.	Chowan.	30	16	66.0	- 2.3	90	22	38	07	35	7.68	+ 2.74	3.31	0.0	8	14	7	10	s.	E. R. Con er.
Fayetteville.	Cumberland.	170	23	68.9	- 1.2	93	17	42	07	36	5.50	+ 1.21	2.25	0.0	10					Frank Glover.
Goldboro.	Wayne.	102	40	68.0	- 1.5	94	1	40	6	41	6.56	+ 1.03	2.00	0.0	10					Mrs. N. B. Taylor.
Graham.	Alamance.	656	8								3.31		1.12	0.0	9					Dr. W. R. Goley.
Greensboro.	Guilford.	843	29	65.8	- 2.4	92	2	37	15	40	2.98	- 1.41	0.93	0.0	8					A. R. Horry.
Greenville.	Pitt.	75	17								5.63	+ 1.64	1.66	0.0	13					C. V. York.
Hatteras.	Dare.	11	36	67.0	- 0.1	82	2	47	6	22	3.02	- 1.12	1.44	0.0	9	20	5	6	sw.	U. S. Weather Bureau.
Henderson.	Vance.	490	17	64.6	- 3.3	87	17	39	15	26	2.90	- 1.18	1.01	0.0	8	13	15	3	nw.	Enoch Powell.
Kinston.	Lenoir.	46	12	63.2	- 1.8	94	17	39	6	39	5.88	+ 1.75	2.04	0.0	11	15	5	11	n.	D. T. Edwards.
Lenoir.	Caldwell.	1,186	37	62.4	- 2.4	93	1	30	15	51	4.15	- 0.46	1.78	0.0	13	24	0	7	s.	G. M. Goforth.
Lexington.	Davidson.	810	9	64.6		90	2	33	15	46	3.86		1.36	0.0	8	19	3	9	s.	H. R. Berrier.
Lincolnton.	Lincoln.	994	5	65.6		92	1	34	15	44	3.32		2.00	0.0	7	22	0	9	s.	L. B. Thompson.
Louisburg.	Franklin.	373	19	65.2	- 2.7	88	37	41	07	35	3.85	- 0.37	1.50	0.0	7	17	10	4	sw.	T. B. Wilder.
Lumberton.	Robeson.	102	27	69.2	- 1.6	96	22	41	6	39	3.44	- 0.70	1.56	0.0	10					B. M. Davis.
Manteo.	Dare.	12	5	65.6		86	2	37	6	32	9.30		4.22	0.0	7	15	11	5	s.	U. S. Weather Bureau.
Marion.	McDowell.	1,425	18	63.2	- 3.5	93	1	32	15	45	5.29	+ 0.43	2.19	0.0	14	14	13	4	w.	Sgt. Thomas McGuire.
Moneuse.	Chatham.	145	16	65.8	- 3.0	91	22	36	15	43	3.57	- 0.21	1.72	0.0	10	20	3	8	sw.	B. J. Utley.
Monroe.	Union.	586	16	66.7	- 1.6	94	3	36	15	40	4.49	+ 0.87	2.65	0.0	8	20	3	8	sw.	T. A. Ashcraft.
Morganton.	Burke.	1,135	23	63.3	- 3.1	90	1	34	15	43	4.68	+ 1.10	2.25	0.0	9	23	3	5	nw.	H. D. Judd.
Mt. Airy.	Surry.	1,048	22	61.6	- 3.0	90	1	29	15	47	3.11	- 0.42	0.65	0.0	13	19	4	8	nw.	Prof. A. H. Merritt.
Mt. Holly.	Gaston.	616	13								3.90	- 1.07	1.78	0.0	8					J. W. Holland.
Nashville.	Nash.	190	6	66.0		92	22	40	6	39	4.21		1.16	0.0	10	12	11	8	n.	J. B. Boddie.
Newbern.	Craven.	12	28	66.2	- 3.0	90	2	39	6	35	11.80	+ 7.04	5.38	0.0	13					J. B. Hill.
Pinehurst.	Moore.	650	6	67.6		90	1	39	15	33	3.33		2.50	0.0	3	22	4	5	w.	General Office.
Pittsboro.	Chatham.	480	19	66.2	- 0.6	90	17	38	07	40	3.70	- 0.94	1.80	0.0	5	26	0	5	sw.	B. M. Poe.
Raleigh.	Wake.	390	39	66.8	- 1.3	90	1	42	15	31	3.92	- 0.97	1.87	0.0	10	15	11	5	sw.	U. S. Weather Bureau.
Ramseur.	Randolph.	442	3	67.1		92	17	35	6	46	3.23		1.33	0.0	9	12	19	0	s.	P. P. Turner.
Randleman.	do.	810	5								2.81		1.21	0.0	9					J. R. Walton.</

TABLE 1.—Climatological data for May, 1910. District No. 2—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
South Carolina—Cont'd.																			
Bowman	Orangeburg	160	5	70.4		95	22	46	15	41	5.49	—0.87	3.20	0.0	6	22	9	0	W. B. Evans.
Calhoun Falls	Abbeville	508	17								2.65	—0.87	0.70	0.0	6	21	0	10	P. J. Pfeiffer.
Camden	Kershaw	222	44								2.78	—0.52	0.84	0.0	8	20	8	3	W. C. Brown.
Catawba	York	562	5								4.96		1.60	0.0	9	14	5	12	Jas. C. Faris.
Chappella	Newberry	402	5								5.14		1.78	0.0	7	18	1	12	W. R. Zimmerman.
Charleston	Charleston	48	40	72.3	—0.1	92	30	54	15	23	1.01	—2.46	0.67	0.0	6	11	15	5	U. S. Weather Bureau.
Cheraw	Chesterfield	144	22	69.2	—1.4	93	1	43	15	40	3.02	—0.85	1.12	0.0	11	13	12	6	J. H. Powe.
Clemson College	Oconee	850	19	64.8	—4.9	81	17	42	14	31	9.44	+6.22	3.11	0.0	11	20	5	6	Prof. John N. Hook.
Columbia	Richland	351	23	70.0	—1.8	91	3	45	15	30	2.20	—0.99	0.63	0.0	10	9	14	8	U. S. Weather Bureau.
Conway	Horry	25	18	70.1	—0.4	94	1	45	6	41	4.59	+1.07	2.50	0.0	6	15	2	14	P. C. Quattlebaum.
Darlington	Darlington	175	13	70.0		93	1	42	14	38	2.24	—1.41	0.95	0.0	7	21	5	6	D. C. McCall.
Dillon	Marion	100	6	70.5	—0.9	95	27	43	6	42	2.75	—0.99	0.73	0.0	8				A. E. Rowell.
Effingham	Florence	106	18								3.22	—0.37	2.00	0.0	4	25	0	6	H. B. McCall.
Ferguson	Berkeley	51	2								2.20		1.07	0.0	7	14	8	9	Pierre Gaillard.
Florence	Florence	136	22	72.0	—0.6	95	22	46	6	36	2.17	—1.55	0.82	0.0	3	11	10	10	H. K. Gilbert.
Georgetown	Georgetown	12	17	71.5	—0.6	92	17	49	6	24	1.48	—2.03	0.85	0.0	3	11	10	10	Wm. Alden James.
Greenville	Greenville	989	18	64.9	—2.3	87	1	43	15	32	12.81	+8.74	8.20	0.0	10	19	1	11	Mrs. S. A. Crittenden.
Greenwood	Greenwood	671	22	70.0	—1.4	94	37	44	15	36	5.16	+1.31	1.35	0.0	11	18	0	13	M. M. Calhoun.
Heath Springs	Lancaster	568	9	70.0		91	4	50	57	32	4.29		1.44	0.0	8	20	6	5	J. A. Weaver.
Jacksonboro	Colleton	13	2	70.6		93	30	47	6	34	1.22		0.46	0.0	4	14	12	5	W. E. Haskell, jr.
Kingsree	Williamsburg	54	22	70.7	—1.0	92	237	50	17	36	4.05	+0.63	2.60	0.0	6	17	4	10	A. O. Matthews.
Liberty	Pickens	900	16	66.4	—2.8	90	17	41	13	36	16.26	+8.80	6.90	0.0	13	17	9	5	Jno. T. Boggs.
Little Mountain	Newberry	711	17	68.2	—3.9	89	17	43	15	29	4.22	+0.98	0.95	0.0	11	19	5	7	Dr. J. M. Sease.
Newberry	do.	592	6	69.1	—2.1	92	3	44	15	38	3.78	+0.20	1.19	0.0	11	12	11	8	W. G. Peterson.
Polser	Anderson	873	5								4.07		2.00	0.0	10	15	4	12	John M. Ward.
Pinopolis	Berkeley	55	17								3.25	—0.17	2.00	0.0	6	28	0	3	Miss E. P. Ravenel.
St. George	Dorchester	109	22	74.2	+1.4	93	22	51	15	32	3.10	—0.82	1.65	0.0	9	16	0	15	G. F. Lewis.
St. Matthews	Calhoun	209	22	70.0	—2.1	88	27	48	15	29	3.10		1.04	0.0	11	14	4	8	J. S. Wannamaker.
Saluda	Saluda	530	8	68.6		93	3	44	15	38	5.42		1.36	0.0	11	10	13	8	Alvin Etheridge.
Santus	Union	512	15	67.8	—2.1	97	1	41	15	37	4.17	+0.92	1.00	0.0	7	16	0	15	E. W. Jeter.
Smith Mills	Williamsburg	62	15								2.98		1.38	0.0	6	19	3	9	W. G. Walker.
Society Hill	Darlington	192	19	69.4	—1.7	90	22	45	5	34	2.60	+0.92	1.01	0.0	6	19	3	9	J. J. Lucas.
Spartanburg	Spartanburg	875	19	67.5	—2.7	96	1	40	15	42	6.89	+2.62	5.15	0.0	10	15	0	16	F. P. Robinson.
Summerville	Dorchester	75	13	71.8	0.0	95	22	48	6	37	1.97	—1.54	0.82	0.0	7	7	24	0	Miss E. H. Gadsden.
Trenton	Edgefield	620	17	70.2	—2.6	94	45	15	28	3.05	—0.09	1.15	0.0	10	15	13	3	C. A. Long.	
Trial	Berkeley	85	23	70.4	—0.2	93	22	46	6	36	3.03	—0.57	2.38	0.0	6	7	18	6	Etzell Gaillard.
Walhalla	Oconee	1,061	19								3.55		1.37	0.0	5	18	5	8	N. L. Fant.
Walterboro	Colleton	69	6	73.8		99	22	46	6	39	3.55	—0.59	1.62	0.0	4	18	12	1	J. A. Westerberg.
Winnaboro	Fairfield	545	21	69.0	—2.3	92	2	44	15	31	2.82	—0.40	2.06	0.0	9	17	6	8	John W. Seigler.
Winthrop College	York	690	11	68.1	—1.8	91	1	41	15	32	3.97	—0.40	2.06	0.0	9	17	6	8	E. R. Rivers.
Yemassee	Hampton	23	15	71.8	—1.5	94	237	49	6	34	2.56	—1.05	1.46	0.0	5	20	2	9	J. G. Hutson.
Georgia.																			
Abbeville	Wilcox	772	18	66.1 ^b	—3.5	89 ^b	29	40 ^b	14	35 ^b	3.67	+4.89	2.66	0.0	5	17	4	10	W. H. Calhoun.
Adairville	Bartow	230	25	74.3	—0.6	94	227	52	15	33	1.76	—1.92	1.02	0.0	13	11	13	7	Dr. J. P. Bowdoin.
Albany	Dougherty	293	21	74.8	+1.4	94	30	51	15	35	1.68	—1.48	1.53	0.0	2	12	9	10	Geo. C. Brannon.
Allapaha	Sumter	362	27	72.4	+2.4	92	227	52	13	31	1.27	—2.02	0.40	0.0	5	18	3	10	James T. Austin.
Americus	Clarke	694	33	67.2	—2.7	87	2	45	14	29	3.81	+0.21	1.30	0.0	10	16	6	9	O. D. Reese.
Athens	Fulton	1,218	45	66.7	—2.5	85	2	46	14	25	6.39	+3.02	1.80	0.0	10	12	9	10	C. D. Cox.
Atlanta	Richmond	180	44	70.7	—1.9	89	3	50	15	30	2.23	—0.81	1.09	0.0	11	11	13	7	U. S. Weather Bureau.
Bainbridge	Decatur	119	18	75.0	+0.2	96	37	47	15	40	1.98	—1.07	1.25	0.0	4	19	8	4	U. S. Weather Bureau.
Barnesville	Pike	875	2	69.8		88	37	46	15	30	2.38		1.25	0.0	10	12	15	4	Mrs. C. O. Wimberley.
Blakely	Early	300	19	74.6 ^b	+0.4	98 ^b	297	47 ^b	15	42 ^b	0.76	—1.88	0.48	0.0	2	13 ^b	15 ^b	1 ^b	Prof. T. O. Galloway.
Brunswick	Glynn	14	12								3.00		1.77	0.0	6	20	2	9	Ralph M. Hobbs.
Butler	Taylor	650	8								1.79	—1.44	0.56	0.0	6	13	6	12	J. B. High.
Camak	Warren	613	17	69.1	—0.9	93	22	44	15	39	7.00	+3.68	1.54	0.0	12				Mrs. Mamie F. Wallace.
Canton	Cherokee	894	17								2.72	—0.52	0.73	0.0	8	21	0	10	J. A. Chapman.
Carleton	Madison	537	11								2.72		0.73	0.0	8	21	0	10	J. M. McAfee.
Carrollton	Carroll	2,100	13	61.5	—4.4	80 ^b	17	39 ^b	14	38 ^b	3.48 ^b	+7.51	1.50 ^b	0.0 ^b	8 ^b	10 ^b	7 ^b	6 ^b	M. C. Power.
Clayton	Rabun	2,100	17	61.5	—4.4	80	4	35	15	43	11.14	+7.51	2.85	0.0	14	18	6	7	J. T. Folk.
Columbus	Muscogee	262	23	71.0	—1.7	91	29	48	15	32	2.70	—0.51	0.75	0.0	7	23	1	7	A. J. Dunbar.
Covington	Newton	800	17								4.07	+0.99	1.90	0.0	10	20	5	6	A. J. Land.
Cuthbert	Randolph	446	11	73.2	0.0	95	30	51	12	41	0.77	+6.85	0.48	0.0	3				Rufus Cruse.
Dahlonega	Lumpkin	1,519	18	63.7	—2.8	86	29	42	14	36	11.33	+4.54	2.43	0.0	15	10	15	6	Prof. W. McMichael.
Diamond	Gilmer	2,020	20	61.6 ^a	—3.9	83 ^a	2	33 ^a	14	37	9.51	+4.54	2.52	0.0	14	14	9	8	Prof. B. P. Gaillard.
Douglas	Coffee	500	3								2.84	—0.36	1.98	0.0	5	19	2	10	R. A. Kinsey.
Dublin	Laurens	452	16								2.93		1.12	0.0	6	16	12	3	Prof. C. W. Davis.
Dudley	do.	361	9	71.7		93	22	48	15	33	2.93		2.97	0.0	5	14	3	14	Mrs. M. E. Martin.
Eastman	Dodge	361	19	74.8	+0.4	97	37												

TABLE 1.—Climatological data for May, 1910. District No. 2—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, all or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
Georgia—Cont'd.																				
Newnan	Coweta	959	22	67.4	- 3.4	89	3	42	13	32	5.42	+ 1.91	1.20	0.0	12	19	1	11	no.	Mrs. I. J. Milner.
Oakdale	Fulton	810	10																	W. R. B. Whittier.
Point Peter	Oglethorpe	1,000	21	68.2	- 1.4	88	27	44	15	31	2.96	+ 0.06	1.00	0.0	7	20	5	6	w.	C. M. Wither.
Poulan	Worth	365	19	72.9	0.0	93	23	48	15	36	2.73	+ 0.47	1.55	0.0	5	20	4	7		Dr. J. F. Wilson.
Putnam	Marion		11																	Mrs. J. M. Collum.
Quitman	Brooks	173	26	74.9	+ 0.4	98	30	56	10	37	1.19	- 2.19	0.53	0.0	4	23	3	5	sw.	A. B. Jones.
Ramsey	Murray	1,363	17	64.8	- 3.7	80	11	39	14	28	8.90	+ 5.49	2.10	0.0	15	15	6	10	sw.	D. E. Humphreys.
Resaca	Gordon	657	17								6.98	+ 3.89	1.42	0.0	11					D. A. Norton.
Rome	Floyd	576	55	65.6	- 3.9	90	29	39	14	37	7.70	+ 4.42	2.08	0.0	14	15	9	7	n.	W. M. Towers.
St. George	Charlton		4	73.3		100	30	49	2	41	2.24		0.65	0.0	7	19	12	0	sw.	A. N. Lund.
St. Marys	Camden	30	19																	David C. Sterling.
Savannah	Chatham	65	60	72.8	- 1.2	92	4	54	15	26	1.17	- 2.54	0.45	0.0	7	13	12	6	s.	U. S. Weather Bureau.
Statesboro	Bulloch	253	10	73.9	- 0.3	97	22	51	6	40	2.04	- 2.14	1.58	0.0	6	12	19	0		J. C. Cromley.
Talbotton	Talbot	750	17	70.6	- 1.5	92	30	44	14	35	1.68	- 1.26	0.40	0.0	9	16	8	7	nw.	Dr. E. L. Bardwell.
Tallapoosa	Haralson	1,150	18	65.3		87	1	40	14	35	5.65	+ 3.02	0.94	0.0	13	15	3	13	sw.	R. M. Strickland.
Thomasville	Thomas	273	27	73.7	- 0.7	95	30	51	15	33	2.35	- 1.52	1.01	0.0	7	16	12	3	sw.	U. S. Weather Bureau.
Tooeva	Stephens	1,050	25	63.0	- 5.6	87	3	40	15	33	8.87	+ 5.08	2.90	0.0	13	18	0	13	w.	E. A. Newton.
Valdosta	Lowndes	219	5	75.4		98	30	52	15	39	0.20		0.20	0.0	1	17	2	12	ne.	Miss Annie L. Twitty.
Valona	McIntosh	10	10	73.0		94	23	54	2	39	0.70	- 4.29	0.50	0.0	2	29	2	0	se.	J. M. Atwood.
Washington	Wilkes	630	23	69.7	- 2.1	92	3	46	14	38	2.94	- 0.60	1.07	0.0	10	14	6	11	ne.	Miss Ella B. Smith.
Waycross	Ware	131	21	74.1	- 0.6	95	3	52	6	37	2.18	- 1.24	1.15	0.0	5	25	1	5	s.	Thomas Sasser.
Waynesboro	Burke	86	19	70.6	- 1.8	89	3	48	15	35	4.53	+ 1.08	2.30	0.0	5	20	4	7	w.	Mrs. H. W. Blount.
West Point	Troup	620	22	69.6	- 3.1	90	3	44	15	37	2.16	- 1.05	0.82	0.0	6	16	0	15	ne.	E. N. Dunn.
Woodbury	Meriwether	641	10	67.0		88	29	44	6	34	2.32	- 1.33	0.71	0.0	6	17	4	10	sw.	G. A. Wright.
Florida.																				
Apalachicola	Franklin	24	6	73.6		90	31	56	15	24	T.		T.	0.0	0	20	5	6	s.	G. H. Whiteside.
Arcadia	De Soto	61	9	76.0		98	19	54	1	42	7.88		2.94	0.0	9					C. S. Bushnell.
Arcator	Alachua	92	24	76.2	+ 0.8	94	3	58	15	35	1.15	- 2.55	0.96	0.0	2	17	17	2		R. B. Hodgson.
Avon Park	De Soto	150	12	76.5	+ 0.8	95	8	54	12	35	5.48	+ 0.73	3.02	0.0	7	13	12	6		O. R. Thacher.
Bartow	Polk	115	14	76.8	- 0.8	97	5	55	27	39	2.50	- 1.56	0.73	0.0	8	14	12	5	ne.	Wm. Hood.
Blountstown	Calhoun		2																	C. L. Hobbs.
Bonifay	Holmes	111	8	73.0		94	30	47	15	37	T.		T.	0.0	0	11	6	14	s.	Wm. Rush.
Brooksville	Hernando	126	16	76.6	- 0.2	90	20	54	7	38	0.68	- 2.73	0.26	0.0	3	17	11	3	w.	C. C. Peck.
Carrabelle	Franklin	10	11																	J. J. Blomquist.
Cedar Keys	Levy	10	12	76.4	+ 1.0	88	22	61	15	26	1.03	- 0.58	0.61	0.0	2	28	0	3	w.	J. B. Lutterloh.
Clermont	Lake	105	17	77.2	- 1.2	96	23	58	37	34	6.45	+ 3.07	2.90	0.0	6	7	23	1	e.	S. S. Fessler.
DeFuniak Springs	Walton	193	13	74.7	+ 1.1	95	20	50	13	36	0.62	- 0.21	0.50	0.0	2	23	2	6	s.	R. W. Storrs.
DeLand	Volusia	27	12	73.8	- 1.4	92	23	54	2	31	1.71		0.74	0.0	7	18	11	2	ne.	Dr. O. B. Webster.
Eustis	Lake	56	19	77.6	+ 0.3	97	4	58	17	35	3.17	- 0.07	1.82	0.0	6	21	10	0	w.	C. T. Smith.
Federal Point	Putnam	5	17	75.0	+ 0.6	95	3	52	2	40	2.90	- 0.96	0.98	0.0	5	16	15	0	e.	E. S. Hubbard.
Fishholloway	Taylor	75	3	74.0		94	3	47	15	42	0.91		0.48	0.0	3					Miss E. Wigglesworth.
Fernandina	Nassau	10	11	74.2	+ 0.3	94	30	60	1	29	1.79	- 2.00	0.58	0.0	6	16	9	6	se.	W. B. C. Duryea.
Fort Meade	Polk	125	25	76.8	+ 0.9	96	4	54	17	39	1.80	- 2.75	0.99	0.0	8	16	12	3	se.	G. L. Broderick.
Fort Myers	Lee	12	26	76.0	- 1.7	89	5	57	1	29	2.90	- 0.86	1.22	0.0	6	28	2	1	se.	Miss M. M. Gardner.
Fort Pierce	St. Lucie	6	17	74.4	- 1.2	91	31	55	1	31	4.15	+ 0.11	1.70	0.0	7	12	7	12	se.	T. J. O'Brien.
Gainesville	Alachua	176	21	75.8	0.0	93	4	54	26	33	1.46	- 1.82	0.68	0.0	5				e.	J. P. H. Bell.
Grasmere	Orange	175	13	75.4	- 1.5	93	4	56	27	32	5.77		2.30	0.0	7	21	10	0		J. B. Escott.
Hilliard	Nassau	69	1	73.4		95	13	49	1	39	2.35		1.50	0.0	5	14	10	7		The Hilliard Co.
Huntington	Putnam	54	13	76.2	+ 0.1	100	23	55	2	35	2.64	- 0.98	1.61	0.0	5	24	6	1	se.	C. E. Walker.
Hypoluxo	Palm Beach	4	12	77.0	+ 0.1	93	31	59	4	30	5.27	- 0.14	2.20	0.0	8	11	13	7	se.	G. A. Angeline.
Inverness	Citrus	43	9	75.6		92	5	59	17	30	3.81	+ 0.10	1.08	0.0	7	2	27	2	sw.	W. H. Miller.
Jacksonville	Duval	101	38	74.9	+ 0.7	92	30	60	14	24	2.18	- 2.07	0.87	0.0	7	11	17	3	sw.	U. S. Weather Bureau.
Jasper	Hamilton	152	9	75.0		95	22	54	9	37	2.00	- 1.95	2.00	0.0	1				se.	G. W. Duncan.
Johnstown	Bradford	125	11	74.4	- 0.4	95	30	50	10	39	4.23	+ 0.82	1.35	0.0	6	15	13	3	e.	A. M. C. Braach.
Jupiter	Palm Beach	34	22	76.2	- 0.2	91	5	65	5	26	4.26	- 0.50	1.65	0.0	11	7	23	1	se.	U. S. Weather Bureau.
Key West	Monroe	14	39	78.4	- 0.6	87	25	68	4	14	0.86	- 2.50	0.45	0.0	5	14	15	2	e.	Do.
Kissimmee	Osceola	65	17	77.6	+ 0.3	95	25	56	2	35	2.39	- 1.19	1.23	0.0	7				ne.	J. A. Simpson.
Lake City	Columbia	210	20	75.0	- 0.7	95	4	55	15	35	0.96	- 2.22	0.85	0.0	2	13	13	5	ne.	W. B. Knight.
Live Oak	Suwanee	109	5	75.0		93	2	53	1	39	3.20	- 0.38	1.70	0.0	2	29	0	2	se.	D. O. Henry.
Macclenny	Baker	125	13	74.2	- 1.0	94	4	50	16	35	1.72	- 2.78	0.67	0.0	5				se.	Griffing Bros. Co.
Madison	Madison	200	6	75.6		96	30	55	15	33	1.02	- 3.67		0.0	8	9	14		sw.	E. J. Vann.
Malabar	Brevard	24	8	75.5		98	31	54	17	36	1.76		0.76	0.0	7	22	7	2	e.	J. F. Farley.
Manatee	Manatee	8	26	75.8	- 0.4	90	22	60	2	24	0.60	- 2.36	0.46	0.0	3	12	15	4	s.	W. P. Fuller.
Marianna	Jackson	80	8	73.2		95	30	48	15	38	0.64		0.47	0.0	4	18	6	7	sw.	W. J. Watson.
Meritta Island	Brevard	30	27	74.8	- 1.7	88	12	56	1	24	1.43	- 2.34	0.84	0.0	10	11	15	5	e.	C. D. Provost.
Miami	Dade	5	13	78.4	- 0.1	91	23	63	15	29	3.06	- 2.93	2.00	0.0	6	9	13	9	se.	E. V. Blackman.

TABLE 1.—Climatological data for May, 1910. District No. 2—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Alabama—Cont'd.																				
Birmingham	Jefferson	700	23	70.6	- 1.3	92	30	46	14 ^b	38	3.77	+ 0.33	1.63	0.0	9	10	17	4	se.	M. J. Morris.
Calera	Shelby	500	22	68.1	- 3.5	87	29	44	14	28	4.65	+ 1.56	1.78	0.0	12	9	7	15	nw.	U. S. Weather Bureau.
Camp Hill	Tallapoosa	738	9	69.4		89	30	46	13	34	2.83		0.65	0.0	8	19	7	5	sw.	Dr. Lyman Ward.
Cedar Bluff	Cherokee	594	6								6.86		1.53	0.0	9	16	14	1		Joe L. Daniel.
Citronelle	Mobile	331	22	72.2 ^a	- 1.8	91 ^d	30	52	9	29 ^d	3.28	- 1.04	0.82	0.0	9	19	10	2	s.	George A. Maloney.
Clanton	Chilton	590	17	69.0	- 1.9	94	11	40	15	42	4.07	- 0.35	1.30	0.0	9	11	4	16	s.	Wallace C. Edler.
Cochran	Pickens										1.87		0.86	0.0	3	16	10	5	se.	E. L. Rose.
Cordova	Walker	334	19	67.4	- 1.4	90	30	36	14	42	3.73	- 0.24	0.93	0.0	9	16	5	10	s.	Scott Maxwell.
Cullman	Cullman	802	2	64.7		88	29	36	14	37	6.16		1.95	0.0	12	17	7	7	nw.	Eugene A. Grayot.
Dadeville	Tallapoosa	700	5								2.66		1.14	0.0	3	14	8	9	sw.	Dr. W. B. Fulton.
Daphne	Baldwin	19	72.5 ^a	- 1.4	92 ^a	27	54 ^a	14	31 ^a		2.77	- 0.80	1.41	0.0	6	19	6	6	nw.	John H. Young.
Demopolis	Marengo	200	18								2.56	- 1.35	1.94	0.0	5	16	4	11	nw.	George E. Pegram.
Eufaula	Barbour	200	26	70.6	- 2.3	93	30	45	15	35	1.22	- 2.19	0.46	0.0	4	18	0	13	w.	Dr. J. B. Whitlock.
Evergreen	Conceh	245	26	71.6	- 1.1	93	30	48	14	39	2.60	- 0.98	1.30	0.0	4	18	0	13	w.	Robert L. Whitcomb.
Fayette	Fayette	359	1																Charles W. Saunders.	
Flomaton	Escambia	91	18	71.4	- 1.7	90	12 ^b	46	15	34	1.87	- 2.55	0.47	0.0	10	21	1	9	s.	T. J. Farria.
Fort Deposit	Lowndes	520	26	71.4	- 2.0	91	29	48	15	32	2.11	- 1.71	0.85	0.0	3	13	3	15	n.	J. F. Hattermer.
Gadsden	Etowah	621	26	66.2	- 3.1	87	11	40	14	35	5.52	+ 1.66	1.38	0.0	9	9	4	18	ne.	D. P. Goodhue.
Goodwater	Cocosa	826	15	67.8	- 3.7	87	11	42	15	37	4.37	+ 0.37	1.50	0.0	10	23	0	8	sw.	D. S. Brown.
Greensboro	Hale	220	31	71.2	- 0.3	90	29	44	14	36	3.46	- 0.69	1.53	0.0	7	14	6	11	s.	W. E. W. Yerby.
Greenville	Butler	444	9								2.46		1.10	0.0	5	26	0	5	sw.	E. M. Lewis.
Hamilton	Marion	14									3.41	- 0.78		0.0					n.	Prof. H. O. Sargent.
Highland Home	Crenshaw	18	71.1	- 1.4	91	29 ^b	50	14	31	2.61	- 1.07	1.05	0.0	8					s.	Prof. Samuel Jordan.
Livingston	Sumter	160	26	69.4	- 2.9	92	29	42	14	36	3.51	- 0.43	2.53	0.0	6	21	0	10	w.	Robert L. King.
Lock No. 4	Talladega	510	13	68.4	- 1.8	90	29	40	14	38	6.25	+ 1.78	1.30	0.0	13	21	0	10	nw.	U. S. Engineers.
Lucy	Houston	5	72.8 ^b		98 ^b	30	42 ^b	15	46 ^b		0.47		0.33	0.0	3	11	16	4		A. L. Crosby.
Maple Grove	Cherokee	17	66.4	- 2.7	91	11	39	13	39		7.17	+ 3.26	2.04	0.0	11	12	13	6	nw.	Mrs. A. L. Awbrey.
Mentone	DeKalb	1,595	3								5.62		2.26	0.0	5	17	3	11	w.	E. Mason.
Milstead	Macon	57	7								2.63		1.10	0.0	6	14	12	5	e.	Evie Oswalt.
Mobile	Mobile	38	71.2	- 2.3	90	30	48	15	30	1.69	- 2.13	1.08	0.0	8	13	9	9	sw.	U. S. Weather Bureau.	
Montgomery	Montgomery	240	17	70.8	- 1.9	92	30	42	14	36	4.04	- 0.70	2.20	0.0	8	12	13	6	s.	Do.
Newbern	Hale	17	64.2	- 4.8	88	29	34	14	40	4.96	+ 0.21	1.13	0.0	13	7	8	16	w.	Dr. J. Huggins.	
Oneonta	Blount	857	16	70.6	- 1.2	90	27 ^b	46	14	31	2.96	- 0.55	1.25	0.0	6	18	2	11	e.	Aquilla J. Ketchum.
Opelika	Lee	817	31	71.8		89	11 ^b	51	14	33	1.26		0.79	0.0	4	24	0	7	s.	A. H. Read, Jr.
Ozark	Dale	460	8	69.7	- 1.5	90	29 ^b	41	15	38	3.97		1.27	0.0	8	16	11	4	sw.	Miss Lucy Sellers.
Prattville	Autauga	281	19	70.6	- 1.9	95	3 ^b	40	14	33	3.09	- 2.31	1.70	0.0	8	15	10	6	sw.	Jos. B. Bell.
Pushmataha	Choctaw	147	30	70.4	- 2.1	94	29	42	14	39	3.26	- 0.02	1.58	0.0	8	16	11	4	e.	E. A. Carr.
Selma	Dallas	312	6																Charles F. Brislin.	
Spring Hill	Mobile	534	20	67.6	- 3.0	88	3 ^b	36	14	37	4.76	+ 1.14	1.65	0.0	9	12	9	10	s.	Rev. J. B. Franckhauser.
Talladega	Talladega	534	20								2.32	- 0.90	0.90	0.0	11	16	0	15	n.	Ross Bartholomew.
Tallapoosa	Elmore	385	19	69.6	- 3.7	93	28	46	9 ^b	41	4.66	+ 0.47	2.22	0.0	6	18	3	10	e.	P. A. Noble.
Thomasville	Clarke	581	2	70.4		80	30	49	14	30	2.64		1.05	0.0	7	18	13	0	se.	J. G. Forster.
Troy	Pike	230	29	69.6	- 2.4	92	29 ^b	43	14	36	2.07	- 1.49	0.71	0.0	9	17	0	14	s.	C. S. Tutwiler.
Tuscaloosa	Tuscaloosa	230	10	71.6	- 1.6	92	29 ^b	48	14 ^b	41	2.41	- 1.11	1.08	0.0	4	12	10	9	s.	W. S. Wyman.
Tuskegee	Macon	216	23	70.9	- 2.4	88	30	50	14	26	2.81	- 1.13	1.25	0.0	5	10	21	0	s.	Prof. George W. Carver.
Union Springs	Bullock	273	24	70.8	- 1.9	91	30	46	14	36	3.20	- 0.70	1.38	0.0	7	11	14	6	nw.	P. L. Cowan.
Uniontown	Perry	1,031	25	64.7	- 2.3	88	11 ^b	36	14	40	6.66	+ 2.16	2.00	0.0	10	15	13	3	s.	M. D. Stevens.
Valley Head	DeKalb	205	18	70.8	- 2.2	91	29 ^b	43	15	37	2.18	- 1.75	1.02	0.0	5	16	0	15	s.	F. T. Floyd.
Wetumpka	Elmore																		U. S. Engineers.	
Mississippi.																				
Aberdeen	Monroe	210	22	68.0	- 2.7	91	29	39	14	37	2.62	- 0.90	1.04	0.0	8	19	2	10	s.	L. D. Godfrey, jr.
Agricultural College	Oktibbeha	424	20	69.0	- 2.8	92	12 ^b	43	14	48	2.62	- 1.34	1.01	0.0	5	10	13	8	n.	S. P. Dent.
Bay St. Louis	Hancock	28	17	73.0	- 2.0	91	31	58	24 ^b	26	2.72	- 0.62	0.88	0.0	8	16	7	8	se.	Brother Stanislaus.
Biloxi	Harrison	24	19	73.8	- 1.6	92	31	56	13	28	2.00	- 1.67	0.57	0.0	8	15	7	9	se.	Miss M. Josie Pope.
Booneville	Prentiss	504	16	66.6	- 2.9	88	29	42	14	33	3.47	- 0.14	1.04	0.0	7	15	13	3	s.	Dr. D. T. Price.
Brookhaven	Lincoln	500	22	71.0	- 2.3	94	30	48	13	38	6.06	+ 1.94	2.64	0.0	9	10	8	13	se.	W. J. Bee.
Columbia	Marion	110	6								7.40		2.70	0.0	7	17	1	13	nw.	N. R. Drummond.
Columbus	Lowndes	191	22	68.4	- 3.8	93	29	38	14	39		- 2.09	0.65	0.0	4	15	4	12	se.	J. B. Love.
Crystal Springs	Copiah	468	18	69.4	- 3.5	90	29 ^b	47	14	35	3.97	- 1.05	1.50	0.0	9	24	4	3		D. H. Miller.
Edinburg	Leake	2	68.2 ^a		91 ^a	29 ^b	40 ^a	14	39 ^a		3.69		0.77	0.0	11	10 ^a	7 ^a	13 ^a	s.	J. Y. Blocker.
Enterprise	Clarke	248	5								3.88		1.36	0.0	9	12	7	12	se.	J. B. Thompson.
Fulton	Itawamba	1									4.41		1.24	0.0	9	15	5	11	n.	A. L. Summers.
Hattiesburg	Forest	189	17	70.4	- 3.7	93	30	48	14 ^b	37	7.52	+ 2.89	1.98	0.0	6	13	2	16	s.	T. C. Spence.
Hazlehurst	Copiah	460	20	69.6	- 3.4	92	29	47	13	38	5.40	+ 0.99	1.96	0.0	9	16	3	12	e.	J. D. Granberry.
Jackson	Hinds	280	23	70.0 ^b	- 2.7	92 ^b	29	44 ^b	14	37 ^b	4.04	+ 0.19	1.51	0.0	9	11 ^a	9 ^a	8 ^a	e.	B. H. Klyce.
Lake	Scott	446	22	68.5	- 2.7	91	29	40	14	37	3.26	- 0.87	1.43	0.0	7	14	5	12	nw.	J. A. Freeman.
Lake Como	Jasper	7	68.5		90	11	40	14	40		3.90		2.10</							

TABLE 2.—Daily precipitation for May, 1910. District No. 2, South Atlantic and east Gulf States.

		Day of month.																															Total.	
Stations.	River basins.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Virginia.																																		
Arvonla	James				.06			.11	T.	.14		.02	.30						.15		.05	.22	T.	.30	1.16	.18	.17			.01		3.07		
Ashland	do				.30			.10	.16				.22						.21		.08	.41		.28	.40					.11		2.29		
Buchanan	do				.07			.37	.35				.07	.21					.19	.05	.19	.43	.07	.70	.40	.42					.20		2.93	
Callville	Chowan							.60	.24				.08						.61		.19	.30		.79							T.		2.81	
Cape Henry	Coast				.01			.04	.66	.34			.06			.15			.38		T.	.08	.02	.11	.66	.50	T.				T.		3.04	
Catawba	Roanoke																																	
Charlottesville	James				.03			.17	.23			T.	.34								.45	.66	.27		.47	.19					.05		2.86	
Clarkeville	Roanoke							.71	.52										.30			.15		.62	.55								2.85	
Columbia	James				.14			.15	.69				.30						.20		.20	.28		.50	.20	.68	.19						2.93	
Danville	Roanoke				T.	T.		.04	.73	.19	T.		.22	T.					.25		T.	.18		T.	.24	.29					T.		2.14	
Diamond Springs	Coast				.01			.17	.65	.42			.15						.37	.15				.44	1.10	.49							4.04	
Hampton	do							.78	.24	T.		.11	T.						.40					.32		1.02	.41				.05		3.43	
Hot Springs	James							.52	.04				.08						.27		.12	.08	.10								.06		2.20	
Ivor	Chowan				.14			.01	.65	.07									.55		.30			.28	1.24	.74	.61				.04		4.63	
Lassiter	James				.55			.05	.26	.07			.41						.32			.23											3.43	
Lexington	do				.01	.04		.38	.17	.20			.51						.24		.18	.06	T.	.32	.32	.12					.02		2.77	
Lynchburg	do				.02			.43	.10	.19			.21						.01	.20		.26	.28	.10							.05		2.78	
New Castle	do							.72	.24	.21		.01							.40		.54	.09	.15		.07	.10					171.20		5.96	
Newport News	Coast				.13			.04	.68	.15			.08	.02					.37		.05	.03		.15	.95	.30	.71				.02		3.68	
Norfolk	do				T.			.06	.59	.28			.10						.41		T.	.20	.01	.85	.59	.39							3.48	
Petersburg	James							.10	.40	.10			.10						.22		T.	.10		.45	.61								2.08	
Randolph	Roanoke							.82	.12				.36						.52			.24		.06		.74	.26						3.04	
Richmond	James				T.	.40	.02	.13	.16	.04		.01	.19					.08		T.	.40	.19	.17	.54	.17	.12					T.	.05	2.67	
Rocky Mount	Roanoke							.42	.25	.14			.69						.37		.22	.44		.20	.31	.29					.24		3.57	
Saxe	do							.10	.25	.55			.30						.50			.30		.04	.68	.29							3.35	
Spottsville (near)	Chowan							.28	.26	.10		.65							.53		T.	.04	.25	.35	1.00	1.36	.24				.10		4.74	
Williamsburg	James							.15	.60				.10						.20				.20	.15	1.01	1.00							3.65	
North Carolina.																																		
Beaufort	Bogue Sound				.15	.09		.03	.48				.42						.06		.04				.30	.82							2.41	
Belhaven	Pungo				.24								.34						.32		.63	.33	.38	.34	.27	.95							9.81	
Brewers	Pedee				T.			.52	.94	.26			.04						T.	.05	.22		.16	.38	.19	.02	.35	.52			.04		3.69	
Caroleen	Santee							2.46	1.00										T.	.07	.48		.40		.10	.30	.80				.21		5.82	
Chalybeate Springs	Cape Fear				.08			.08	1.89	.13			T.	.33					.16		.38	.03			.95	.36							4.39	
Chapel Hill	do				.06			.30	1.30	.06			T.						.43		.08	.10		1.00	.06								3.39	
Charlotte	Santee							.98	1.83	.01			.22						T.	T.	.28		.54	.08	.18	.01	.11	T.					6.49	
Chimney Rock	do				.10			.80	2.55	.10									.06	.07	.37		1.12		.06	101.06	.07					T.		4.21
Clinton	Cape Fear				.02			.15	.06	1.86			.07						.18						.12	.23	.55						3.48	
Durham (near)	Neuse							1.10	.20	.63		.04							.35		T.	.24	T.	.81	.70	.39	.72						5.04	
Eagletown	Chowan				T.			T.	1.50	1.35			.53						.38		T.	.40	.42	.40		.31	.61						7.68	
Edenton	Albemarle Sound				.10			.20	.95	2.25			.20						.12		.01	.11	.02	.14									5.50	
Fayetteville	Cape Fear							T.	.69	2.00									.01	.32				1.11	.25	1.07	1.05					T.	6.56	
Goldboro	Neuse				.02	.04		.12	1.12	.44			.08						.31				.63			.58	.02						3.31	
Graham	Cape Fear				.01			.10	.93	.67	.05		.07						.20				.37			.59							2.98	
Greensboro	do							.95	1.12	.04			.12						.18		.01	.01	.15	.01	.16	1.66	.97						5.63	
Greenville	Tar				.12			.05	1.40				.20	.41	T.				.31		T.						.06	.02					3.02	
Hatteras	Pamlico Sound				.05			.21	.32	.76			.23						.32		.03	.02		1.01									2.90	
Henderson	Neuse				T.			.05	T.	1.35	2.04	.01	.05	.11					.32				.14	.19		.65	1.24				.03		5.88	
Kinston	Santee				.08			.52	1.78	.03			T.						.04	.04	.15		.40	.05	.04	.04	.51	.67					4.15	
Lexington	Pedee							.32	1.36	.30									.18		.38	.53			.65	.14							3.86	
Lincolnton	Santee							.20	2.00	.62									.02	.23					.20								3.32	
Louisburg	Tar				T.			.15	.50	.32			.24						.35				.14	T.		.95	.15						3.85	
Lumberton	Lumber							.62	.02	1.56			.04						T.		.32		.14			.02	1.34	.16				.01	3.44	
Manteo	Roanoke Sound				.10			1.17	.24			.11							.32		.32				.42							.14	9.30	
Marion	Santee				.03			.75	.19	.03		.03							.08	.04	.23		.31	.08	.05	.02	.38					.07	5.29	
Moncure	Cape Fear				.03			.03	1.72	.48			.12						.19		.05	.38				.56	.01						3.57	
Monroe	Pedee							.08	2.65				T.	.24					.24		.25	.35		.31	.37								4.49	
Morganston	Santee							.34	2.25	.27									.01	.10	.20		.29	T.		.38	.84						4.68	
Mount Airy	Pedee				T.	.13		.32	.65	.05		.34																						

TABLE 2.—Daily precipitation for May, 1910. District No. 2—Continued.

Stations.	River basins.	Day of month.																															Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
South Carolina—Cont'd																																			
Clemson College	Savannah				.05			1.53	3.11	1.65			.10					T.	.22	.22	1.00			.33	.29	.94							9.44		
Columbia	Congaree			.54	.09			.10	.14				.01					T.	T.	.24		.51	T.	.18	T.	.36	.03						2.20		
Conway	Waccamaw			.34						.72				.30												.31	.50	.42					4.59		
Darlington	Pedee							.06	.45									.05	.02	.68	.03				.95							2.24			
Dillon	Little Pedee			.17	.02			T.	.17			T.		T.					.11		.50			.39	.73	.66							2.75		
Effingham	Lynches				.25			T.		.97																T.	2.00						3.22		
Ferguson	Santee				.86					.06																.21	.07						2.20		
Florence	Pedee				.05			T.	.04	.82											T.	.12	.36			T.	.74	.04					2.17		
Georgetown	Coast			.85									.30												.33								1.48		
Greenville	Saluda				.10			8.20	1.16									.09	.37		.75	.14		1.00		.88					.12		12.81		
Greenwood	do				1.35			.08	.93	.99				.13				.11	.34		.52	.33		.08		.30							5.16		
Heath Springs	Waterce			.18				10.1	3.1				.22								1.44			.10		.92	.02						4.29		
Jacksonboro	Combahee			T.	T.				.30				.21												T.	.25	.46						1.22		
Kingstree	Black					.60		.05	2.10	.6	.34		.28							.05						182.60							4.05		
Liberty	Savannah				.10			.05	2.10	.6	.34		.10							.76	1.60	20.1	50		.60	1.62					.40		16.26		
Little Mountain	Saluda			.01	.39			.34	.82				.03					T.	.02	.17	.80	.25		.95	.40	.04							4.22		
Newberry	do			.08	.15			.46	1.49				.01					T.	.02	.20	.76	.17		.02	.72								3.78		
Pelzer	do				T.			.04	2.00	.60									.26	.22		.52	.12		.10		.16					.05		4.07	
Pinopolis	Cooper													.30												.40	2.00							3.25	
St. George	Edisto				.25				.20					.12							.20	.20				.02	.44	1.65					3.10		
St. Matthews	Santee				.10				.05	.32																							5.42		
Saluda	Saluda			.56				.84	.96	.04				.15							1.04	.35	T.		.02	.68			.73					4.17	
Santee	Broad			.11				15.1	.56																.19	.79	.08						.05		2.98
Smith Mills	Pedee			.05	.18				.63					.38							.08						.39	1.00	.32					2.60	
Society Hill	do					.15	.66											.15				.58				1.01									
Spartanburg	Broad				.02			T.	5.15	.80								.05	.30		.20	.10				.10		.12				.05		6.89	
Summerville	Ashley			.01	.12					.13				.22				T.	T.							.07	.60	.82						1.97	
Trenton	Edisto						.35	.38					.13					T.	.18	.23	.32	.25				.03	1.15	.03					3.05		
Trial	Santee			.60				.20					.10							.15							.50	2.38					3.93		
Walhalla	Savannah																																		
Walterboro	Ashepoo			.11				.75	.23																1.27	.80	.39						T.	3.55	
Winnabow	Broad							.20	1.62				T.							.80		.20											2.82		
Winthrop College	Catawba				.04			102.06	.02					T.																				3.97	
Yemassee	Combahee				.39				.43					.20													.08	1.46						2.56	
Georgia.																																			
Abbeville	Ocmulgee			T.					.09	.04																.04	.84	.66						3.67	
Adairsville	Coosa						.20	.78	.33					.27				.14	.60	.62	1.78	1.76		.72	.05	.82	.10						T.	8.17	
Albany	Flint							.20	.36					T.												.18	.42	.60						1.76	
Allapaha	Allapaha								.15																									1.68	
Americus	Flint							.25	.26																	.40	.06	.30						1.27	
Athens	Oconee			.23			.15	.20	.12					.22				T.	.10	.19		1.30	.15			.22		.93					3.81		
Atlanta	Chattahoochee						T.	.81	.58				.47					.36	.11	.23	1.14	.58		.31	1.80	T.							6.39		
Augusta	Savannah			.04			.09	.38					.19					T.	.02	.02	.01	.13		.26	T.	1.05	.04						2.23		
Bainbridge	Flint							.35	.13	.05			.12					.07	.04			.57	.68		.07	T.	.50						1.98		
Barnesville	do																																		
Blakely	Chattahoochee			T.			T.	.28																	.48									0.76	
Brunswick	Altamaha																																		
Butler	Flint								.12	.65				.10												.72	.35	.06						3.00	
Camak	Savannah													.52							.15	.12	.07			.37		.56					1.79		
Canton	Coosa						.10	.37	1.54					.17					.65	.73	.99	1.14	T.	.16	.75	.30							7.00		
Carlton	Savannah							.24	.49	.31									.14	.24		.73	.32				.25						2.72		
Carrollton	Chattahoochee																																		
Clayton	Savannah						.28	2.02	.85	.18			.14					.14	.33	.39		1.72	.15	.22	.20	1.81	.16							11.14	
Columbus	Chattahoochee								.75				.54							.13	.04		.59			.07	.58						2.70		
Covington	Ocmulgee							.08	.10	.38				1.90					.50	.10	.05		.20			.43		</							

TABLE 2.—Daily precipitation for May, 1910. District No. 2—Continued.

Stations.	River basins.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Georgia—Cont'd.																																		
Tallapoosa	Coosa				.03			.02	.94	.54				.32		T.	.30	.05		.73	.73	.47	.30	.93	.27								5.65	
Thomasville	Ocklocknee								1.00	.01						T.	T.	.28	T.			T.	.15	.87						.01	.03		2.35	
Toccoa	Savannah			.07				.32	2.90	.83				.06			.30	.40		.75	.66		.14	12.2	.19	.11							8.87	
Valdosta	Suwanee									.20																							0.20	
Valona	Ogeechee							T.																	T.	.30	.50						T.	0.70
Washington	Savannah					*	.42	.22	.20				*	.24				.03	.05	*	1.07	.12	*	.07	*	.52							2.94	
Waycross	Satilla								.35													.12	.36	.20	1.15								2.18	
Waynesboro	Savannah							T.	.90					.75				.07		.20	*	.31		2.30									4.53	
West Point	Chattahoochee							*	.16				*	T.		*	.12	.36		*	.82	*	.04	.66									2.16	
Woodbury	Flint							*	.71				*	.12			.19				*	.60		.50	.20								2.32	
Florida.																																		
Apalachicola	Coast																					T.	T.										T.	
Arcadia	Peace Creek									.04	1.49	.21										T.	.10	.73	2.18	.09	2.94		.10	T.				7.88
Archer	Waccasassa									.96															.19								1.15	
Avon Park	Kissimmee		.04				T.	T.			.08	.86	.47									.01			T.	1.00		3.02					5.48	
Bartow	Peace Creek							.06	.39													.03	.73		.05	.56	.66		.02				2.50	
Blountstown	Apalachicola																																T.	
Bonifay	Choctawhatchee							T.																T.									T.	
Brooksville	Withlacoochee											.24											.18			.26							0.68	
Carrabelle	Coast									.42																								
Cedar Keys	do										.30															.61							1.03	
Clermont	Lake							1.35		.20													2.90	.40		.20	1.40						6.45	
De Funiak Springs	Choctawhatchee								T.														.12	.50									0.62	
De Land	St. Johns							.02	.31													.01	.24	.22	.17	.74							1.71	
Eustis	Lake							.35	.47													.31	.22	.13	1.69								3.17	
Federal Point	St. Johns								.38													T.	.16		.98	.95							43	2.90
Fenholloway	Fenholloway																								.48	.33							10	0.91
Fernandina	Coast							.24	.46										.02				.35	.58	.14	T.							1.79	
Fort Meade	Peace Creek							.03	.38	.13	.08	T.										.18	T.	.23	.04	.99		.12						1.80
Fort Myers	Caloosahatchee		T.	T.				T.	.13		.22	1.22		T.							.67				.46								2.90	
Fort Pierce	Indian							.30			1.20	1.70	.55																				4.15	
Gainesville	Lake								.11														.12	T.	T.	.26	.02	T.					1.46	
Grasmere	do							T.	1.70	.33				.04								.24	T.	.18	.98	2.30							5.77	
Hilliard	Nassau								.12														.40	.30	.23	1.50							T.	2.55
Huntington	St. Johns							.38	.32																								2.64	
Hypoluxo	Lake							.36			.49	1.52	2.20										.17			.47	.04	.02					5.27	
Inverness	Withlacoochee								.65													1.08	.34	.19	.14	.56							3.81	
Jacksonville	St. Johns							T.	.12	.34												.09		.17	.56	.13							T.	2.18
Jasper	Suwanee																																2.60	
Johnstown	do								1.10													1.35		.02	.56	.08							1.12	4.23
Jupiter	Coast							.18	.24	.47	1.63	.02											.22		.02	1.12	.20	.14	.02				4.26	
Key West	do								.43	.28																							0.86	
Kissimmee	Kissimmee								.13		T.			.05									T.	.40		.23	.21	.25	.12		.01	T.	2.39	
Lake City	Suwanee							.11														T.	T.	T.	T.	T.	.85						0.96	
Live Oak	do							1.50																									3.20	
Macclenny	St. Marys								.47														.20	.35	.25	.67	.25						1.72	
Madison	Suwanee							T.	.76	.13	.05														*	.55							1.02	
Malabar	Indian								.76	.13	.05			.16	.17		T.																1.76	
Manatee	Manatee									.04																	.17	.32					0.60	
Marianna	Apalachicola								.01	.47														.09	.07								0.64	
Merritts Island	Indian							.01	.15	.69	.01	.02		.04									.01		.03	.31		.16					1.43	
Miami	Coast							T.	.15	T.	.30	.37																					T.	3.06
Middleburg	St. Johns								.50																								.60	3.23
Milligan	Yellow							.08																.49		2.95							.01	3.53
Molino	Escambia							1.25				.35													.40	.92							3.26	
Monticello	Aucilla								.25																								0.25	
Mount Pleasant	Apalachicola																																	0.66
Newport	St. Marks								T.																								0.40	0.40
New Smyrna	Coast							.05	.26	.10																1.16	1.00						2.57	
Ocala	St. Johns												.55																				1.18	
Orange City	do																							.08	.03		.43	.82					1.36	
Orlando	do						T.	T.	T.	1.20	T.			T.	.11								.36	.10	.03	.65	.37							

TABLE 2.—Daily precipitation for May, 1910. District No. 2—Continued.

Stations.	River basins.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Alabama—Cont'd.																																		
Greenville	Escambia												.54	T.				.26			1.10			.22	.34								2.46	
Hamilton	Tombigbee							.59													2.82												3.41	
Highland Home	Escambia						.22	.17	.17				T.					T.	.05		.63	.42	.64		.31								2.61	
Livingston	Tombigbee																		.06		.04	.53	.46		.08								3.51	
Lock No. 4	Coosa				.53		.27	.10	.50									.43	.32	.26	.20	1.30	.05	1.07		1.02	.20						6.25	
Lucy	Chattahooches						T.	T.	.33	.06									T.						.08						T.	T.	0.47	
Maple Grove	Coosa			.67			.15	.17					T.				T.	.08	.33		2.04	1.37	.65	.54	.93	.24	T.						7.17	
Mentone	do								1.62									T.															5.62	
Milstead	Tallapoosa								.26						.16					.53		2.26	.65		.56	T.							2.29	
Mobile	Coast								.20				T.					T.	.71	T.	.59	T.	.17	.54							.08	T.	1.69	
Montgomery	Alabama			T.					.03	.09							T.		T.	.02	.26	T.	1.08	T.	.04	.11	.06	T.					4.09	
Newbern	Black Warrior			.02														.80				2.20	.21	.19	.46	.01					.15		4.98	
Oneonta	do			T.	.56		.03	.20	.08				T.				.09	.07	.40	.46	.90	.70	.26	.08	1.13								2.96	
Opelika	Tallapoosa									.74					.15					.35		1.25		.11	.36								1.26	
Ozark	Coast								.25														.12		.10	.79							3.97	
Prattville	Alabama						.49	.35					T.					T.	.18	.15		1.27	.20	.41	T.	.92							2.74	
Pushmataha	Tombigbee							.02												.18			T.	1.70	.12	.28	.13	.28				T.	.38	3.09
Selma	Alabama				.30				.50									T.			.20	.12		1.58	T.	.12	.22	.22					3.26	
Spring Hill	Coast																																4.76	
Talladega	Coosa				.70			.10											.61	.22	1.51	.25	.05	1.65	.03								2.32	
Tallassee	Tallapoosa								T.	.41					.01			T.	.03	.29	.01	.03	.90	.03	.36	.24	.01							2.74
Thomasville	Tombigbee							.81											.42														2.64	
Troy	Escambia							1.05						.42				T.			.05	.45	.05	.34	.28								2.07	
Tuscaloosa	Black Warrior																		.28	.04	.63	.71	.42	.16	.15	.22					T.	.06	2.41	
Tuskegee	Tallapoosa								T.	.90									.27	1.61	.08												2.81	
Union Springs	do							.65	.15									T.					1.25		.35	.41							3.20	
Uniontown	Black Warrior							.05										T.	.35		1.38	.19	.12	T.	1.01								6.66	
Valley Head	Coosa			T.	T.			T.	T.	1.15				.18				.20	.03		.47	.75	2.00		.68		.53	.67					2.18	
Wetumpka	do								.23															1.02		.28	.22							
Mississippi.																																		
Aberdeen	Tombigbee				.10			.14										T.	T.	.10		.62	.32	1.04	T.	T.	.20					T.	.10	2.62
Agricultural College	do																				.66	1.01	.96			.23							3.44	
Bay St. Louis	Coast							.88											.26	.32	.25		.15	.26	.58	.02							2.72	
Biloxi	do							.35											.07	.57	.03		.50	.08	.39	.01							2.00	
Booneville	Tombigbee						.68							.15				T.	1.04		.40	.82		.95	.03	T.							3.47	
Brookhaven	Pearl							.03	.25											.80	.55	.39	2.64	.65	.51	.24							6.06	
Columbia	do								1.12											T.	1.40	.32	.70	.82	.84	.20							7.40	
Columbus	Tombigbee					T.														T.	.20	.61	.65	T.									1.56	
Crystal Springs	Pearl							.22												.30	.02	.93	1.50	.08	.65	.24	.03						3.97	
Edinburg	do			.25				.40	.36										.01		.24	.16	.65	.77	.28		.05						3.69	
Enterprise	Chickasawhay							.01	T.											T.	.01		.04	1.36	.14	.10	.80					1.06	3.88	
Fulton	Tombigbee							.01	T.										.22	.74		1.24	.82	1.02	.24		.06						4.41	
Hattiesburg	Leaf							.06													.82	1.92		1.98		1.54	.60						7.52	
Hazlehurst	Pearl					T.		.30												.96	.45	.78	1.66	.26	.58	.40							5.40	
Jackson	do							.51												T.	.10	1.71	.51	.40	.08	.49	.02						7.64	
Lake	do																			T.	.77	1.43	.33	.10	.05	.04							5.44	
Lake Como	Leaf																			.37	1.12	.10	.10	.35	.27								3.90	
Laurel	do							.10	.19											T.	1.02	1.18	2.82	.18	.08	.60	.02						T.	6.19
Leakesville	Chickasawhay							.20													.30	.35		1.53	.31	.50	.22						6.39	
Louisville	Pearl				.18																.20	.65	.55	.09		.15							3.88	
McNeill	do								1.57												.36	.20	.82	T.		1.62							4.57	
Macon	Tombigbee								T.	.72												.13	.55	1.10	T.	T.	T.						2.95	
Magnolia	Pearl						.04	.54													.69	.50	1.15	.44	.60	1.02	.01						4.99	
Meridian	Chickasawhay						.08		T.												.03	2.54	.19	.01	.03	.04							3.26	
Merrill	Pascagoula							.24													T.	.34		2.00		.40	.34							3.36
Monticello	Pearl							.20												T.	2.29	244.25	.35	.40	.60	.02							T.	8.35
Okolona	Tombigbee				.10															.28	1.60		.45	.42	.80	.70	T.	.26					.04	4.59
Pascagoula	Coast							1.00												.03	.35		.12		.17	.98							.08	2.75
Pearlington	Pearl								1.01												.05	.74	.30	.08	.23	1.05								3.46
Porterville	Tombigbee							.05													.15		.10	.18		.16							.27	1.85
Shubuta	Chickasawhay							.40													2.34	.26	.06	2.00	.02	.30	.32						.22	5.92
Waynesboro	do							.40													.80	.54	.12	2.90	.05	T.	.62	.05					.11	5.59
Woodland	Tombigbee				.43			.10												1.18			.97	.88	.73		1.40							

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 2, South Atlantic and east Gulf States.

Date.	Virginia.								North Carolina.																Charleston, S. C.				
	Lynchburg.		Norfolk.		Richmond.		Saxe.		Charlotte.		Edenton.		Fayetteville.		Hatteras.		Newbern. H.		Raleigh.		Reidsville.		Salisbury.				Wilmington.		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
1...	89	56	72	54	85	56	89	52	89	61	87	60	93	61	80	61	89	57	90	63	92	59	93	56	90	63	86	64	
2...	87	53	76	54	80	56	88	51	86	62	87	55	92	61	82	60	90	55	89	61	92	57	89	60	90	63	83	63	
3...	87	56	80	60	86	58	90	49	86	60	87	62	92	62	76	64	88	55	89	64	89	59	78	60	85	61	79	65	
4...	09	48	71	53	67	51	85	46	73	54	78	54	80	61	70	55	72	58	75	52	76	60	74	47	74	56	88	65	
5...	68	43	58	48	63	44	79	42	69	51	70	45	70	52	60	49	70	49	66	50	71	46	74	41	66	53	66	59	
6...	66	37	63	45	64	43	68	34	68	48	69	38	72	42	66	47	73	39	69	45	73	41	64	54	66	48	70	61	
7...	56	42	72	47	71	41	61	42	63	57	70	40	66	54	67	52	74	46	60	50	69	48	69	57	68	58	74	66	
8...	75	56	73	59	78	57	72	55	68	58	71	56	75	50	71	63	70	53	71	59	72	56	70	59	75	61	76	67	
9...	67	57	73	58	73	54	71	60	69	56	77	60	76	60	73	61	76	58	71	58	70	57	82	54	78	61	80	67	
10...	80	52	74	52	79	51	80	46	79	54	78	59	84	53	74	62	82	47	80	52	82	49	89	59	82	56	76	61	
11...	85	61	85	63	85	59	86	59	85	59	80	60	90	56	74	65	85	54	86	59	87	56	82	61	82	60	84	64	
12...	84	50	70	54	59	49	76	48	79	54	78	55	90	63	74	57	87	61	82	51	81	52	69	43	87	59	86	68	
13...	61	44	62	51	65	44	75	42	66	49	66	50	68	49	64	56	69	50	65	46	71	45	66	42	70	53	74	60	
14...	56	40	64	48	61	45	65	36	66	45	69	42	70	45	68	54	69	42	64	48	67	46	72	36	70	49	70	57	
15...	64	37	60	52	63	42	66	34	67	41	67	40	70	42	63	55	70	48	66	42	68	36	62	43	70	48	71	54	
16...	64	41	64	51	69	43	65	37	65	51	70	38	69	46	63	54	69	44	68	46	66	43	64	45	68	49	69	61	
17...	70	44	66	51	70	43	75	38	65	55	72	50	78	58	66	56	74	44	74	49	71	50	66	53	69	48	71	61	
18...	75	53	73	56	77	55	80	40	74	53	77	55	71	61	69	62	70	52	75	60	82	52	84	53	73	62	76	68	
19...	77	46	78	59	78	49	79	42	80	58	74	54	85	55	73	63	76	55	80	57	82	50	84	50	77	61	80	68	
20...	70	56	78	60	74	58	75	56	79	62	70	50	78	61	78	62	77	57	75	62	76	61	82	62	77	65	79	69	
21...	78	64	81	66	82	64	82	66	79	62	84	54	87	67	77	68	83	61	82	65	82	62	84	62	79	68	82	70	
22...	85	61	86	66	86	63	88	56	86	64	90	65	93	64	78	68	85	62	90	65	90	62	90	61	86	68	85	71	
23...	85	67	88	64	88	64	88	63	83	64	85	65	92	67	78	69	86	65	88	67	87	65	88	64	85	72	86	73	
24...	81	63	85	65	85	65	85	65	82	60	85	66	89	67	89	62	79	70	83	61	84	65	85	64	85	81	88	81	
25...	80	62	72	64	80	59	85	64	79	62	80	65	84	64	78	70	79	62	82	64	82	62	83	63	78	70	80	72	
26...	74	56	74	61	75	56	77	57	76	55	78	59	80	59	77	66	79	60	77	57	80	52	81	54	81	62	83	67	
27...	74	48	72	61	72	52	75	45	79	56	80	54	79	55	72	61	79	54	76	55	79	51	82	49	79	59	82	64	
28...	77	46	75	58	77	49	78	42	79	56	81	51	80	52	78	61	83	53	77	54	80	49	83	48	77	60	78	68	
29...	86	48	83	59	84	53	85	45	85	56	85	50	88	52	80	69	84	51	85	57	89	51	90	50	84	61	83	69	
30...	77	59	75	65	77	60	82	60	82	65	87	64	89	69	78	65	86	65	83	65	85	60	85	63	85	70	92	71	
31...	61	35	70	59	67	55	70	47	77	61	86	54	82	59	78	66	81	53	75	57	75	47	81	58	81	65	81	69	
Mns	73.8	51.6	73.6	56.8	74.9	52.6	77.6	48.8	76.2	56.6	78.0	53.9	81.0	56.8	73.0	61.0	78.6	53.9	77.2	56.3	78.8	53.0	78.8	53.9	77.8	59.9	79.1	65.5	

South Carolina.										Georgia.																			
Columbia.		Conway. H.		Georgetown.		Greenville. H.		Newberry.		Society Hill.		Tulsa.		Adairsville. H.		Albany. H.		Atlanta.		Augusta.		Dahlonega.		Macon.		Savannah.			
Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	89	61	94	53	92	71	87	55	91	53	89	62	90	57	84	56	83	58	88	58	84	51	86	56	89	64	89	64	64
2...	90	63	90	53	93	60	85	54	91	54	89	63	89	57	87	54	91	59	85	67	88	59	86	53	88	57	84	62	62
3...	91	62	88	56	84	63	86	56	92	59	89	67	91	56	87	55	92	61	83	64	89	60	83	51	88	60	82	64	64
4...	82	61	84	65	84	63	78	57	83	66	78	56	80	64	58	60	82	67	84	68	77	60	78	64	92	60	94	61	61
5...	71	50	68	55	68	57	68	49	72	53	70	45	69	54	72	51	81	60	73	55	73	46	75	60	71	51	51	51	51
6...	69	50	69	45	71	49	63	52	69	48	72	57	70	46	70	44	85	58	70	55	72	53	69	50	76	58	72	59	
7...	73	59	80	56	74	63	62	54	68	59	72	61	76	60	67	52	86	64	73	57	74	62	62	52	78	64	74	64	
8...	78	64	81	65	80	65	63	56	71	59	75	63	84	64	69	59	78	68	71	58	75	64	64	55	72	62	80	65	
9...	74	60	80	64	78	69	69	53	75	59	72	53	88	62	75	46	80	61	70	49	74	61	71	47	75	58	81	64	
10...	82	52	84	51	78	59	78	50	83	50	81	60	83	50	81	50	86	57	79	58	82	54	82	46	83	54	80	62	
11...	89	61	89	54	85	61	84	52	89	58	86	60	90	54	85	56	91	58	84	64	89	60	84	51	87	58	87	61	
12...	85	61	91	63	90	67	78	62	86	63	87	53	89	61	72	60	92	60	78	54	86	64	81	58	87	58	90	64	
13...	74	54	73	55	80	57	65	51	73	52	70	49	73	56	68	47	80	57	66	49	71	56	64	46	72	54	76	60	
14...	72	50	73	47	70	54	68	47	73	46	71	46	72	49	68	40	76	54	66	46	72	52	66	42	70	48	73	55	
15...	71	45	74	45	70	53	66	43	72	44	69	50	73	47	72	42	82	32	69	47	74	50	65	43	74	49	71	54	
16...	71	52	72	51	72	54	61	52	70	53	71	55	72	47	57	53	84	64	61	53	71	58	61	51					

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 2—Continued.

Date.	Georgia.						Florida.																							
	Thomasville.		Waycross. H.		West Point. H.		Avon Park.		Fort Myers.		Gainesville. H.		Jacksonville.		Jupiter.		Key West.		Miami.		Orlando.		Pensacola.		Tallahassee. H.		Tampa.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1	88	56	90	67	89	52	89	57	85	57	88	59	87	64	78	71	82	71	85	69	88	51	76	62	87	56	84	63		
2	90	57	90	60	88	54	89	55	86	58	87	61	84	63	80	70	81	70	84	69	88	56	76	62	88	59	86	64		
3	92	60	95	58	90	57	90	57	87	60	92	62	86	63	81	72	82	71	86	70	87	57	78	61	91	61	87	63		
4	92	63	92	61	72	63	93	58	87	63	93	64	91	68	81	68	80	68	84	70	93	60	81	67	90	62	87	66		
5	83	63	75	63	77	56	93	61	89	60	93	65	75	65	81	65	81	68	89	60	93	64	77	63	86	54	88	67		
6	84	57	82	52	80	52	87	67	87	68	82	64	74	65	81	72	83	69	88	64	80	68	73	69	82	60	86	66		
7	83	65	82	60	80	58	89	68	87	68	85	64	79	65	78	70	83	74	86	72	84	66	75	67	90	63	85	67		
8	80	63	84	64	74	67	95	68	88	67	90	65	86	66	80	72	83	75	88	74	89	68	72	65	82	66	84	70		
9	80	58	83	63	76	51	91	71	84	68	82	69	84	65	85	70	81	72	84	73	88	68	74	60	80	62	82	69		
10	84	56	87	54	84	52	86	67	81	69	86	65	82	64	82	70	82	70	84	71	85	67	77	65	83	60	82	65		
11	89	57	92	58	89	56	74	67	75	68	89	65	87	65	81	67	82	70	85	69	85	67	76	68	87	60	80	70		
12	89	60	91	60	90	63	88	54	83	65	89	64	89	65	86	68	84	74	88	68	89	68	81	62	88	61	82	70		
13	81	57	82	60	74	49	86	60	84	65	86	66	83	66	88	68	81	75	89	68	86	67	77	59	80	60	81	65		
14	77	53	81	55	72	45	88	62	85	63	83	61	79	60	83	69	81	73	87	66	83	64	76	60	78	59	84	59		
15	83	51	81	56	76	44	85	65	86	67	85	60	76	61	81	72	83	72	84	63	84	61	76	61	78	53	86	63		
16	82	64	78	60	73	52	81	65	85	67	86	63	78	67	78	71	85	74	83	73	81	61	74	68	84	63	85	65		
17	82	60	82	58	76	59	83	63	84	63	86	62	79	67	79	71	83	72	82	71	82	60	75	68	82	61	84	61		
18	77	65	82	62	77	60	88	63	86	61	86	62	83	66	79	71	81	72	84	71	86	60	77	69	79	63	85	63		
19	87	64	89	66	82	61	90	60	86	63	90	65	83	68	78	72	84	72	85	70	87	61	78	70	84	65	86	64		
20	86	61	89	64	84	65	91	60	87	63	91	65	85	66	79	73	84	74	84	71	88	62	79	65	83	63	87	67		
21	89	63	93	64	82	60	87	71	86	71	91	67	89	68	81	75	84	76	86	72	90	71	79	69	86	64	86	70		
22	90	68	93	65	84	62	95	72	88	71	92	67	87	70	81	71	85	76	89	73	90	73	78	67	85	66	89	70		
23	90	69	88	67	84	65	94	69	88	71	92	69	88	71	82	73	85	77	91	74	93	71	83	64	86	72	88	71		
24	85	70	84	67	83	67	92	73	87	70	89	61	85	69	83	74	86	77	91	75	91	71	77	66	84	72	86	73		
25	86	65	88	66	79	60	84	70	84	73	83	61	85	70	83	69	87	77	90	73	83	72	78	64	85	67	82	70		
26	85	61	88	65	81	53	90	68	88	73	87	54	84	66	85	72	87	76	86	68	88	63	78	65	85	63	84	70		
27	87	61	88	61	86	57	85	70	86	72	86	60	83	69	81	72	87	77	88	70	85	73	85	68	87	65	86	71		
28	88	61	88	58	84	59	85	72	86	70	88	62	82	68	83	73	86	77	87	74	86	71	82	73	88	66	87	70		
29	89	65	88	62	90	61	85	68	85	70	86	68	83	70	80	73	86	74	83	74	86	68	80	73	86	67	84	69		
30	95	65	94	65	90	65	90	60	88	65	92	61	92	68	82	65	85	76	87	74	91	59	90	70	92	65	85	65		
31	88	66	88	64	83	64	86	66	85	65	92	66	85	65	90	69	85	76	90	70	93	71	87	72	88	68	85	73		
Mean	85.8	61.4	86.7	61.5	81.6	57.7	88.3	64.7	85.6	66.3	88.0	63.5	83.6	66.2	81.9	70.5	83.5	73.4	86.4	70.3	87.0	65.1	78.2	65.9	84.8	63.2	84.9	67.1		

Date.	Alabama.										Mississippi.													
	Anniston.		Birmingham.		Eufaula. H.		Mobile.		Montgomery.		Tuscaloosa. H.		Uniontown.		Columbus. H.		Hattiesburg. H.		Jackson.		Meridian.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1	84	58	86	54	81	60	85	52	78	65	86	58	85	52	84	57	86	52	89	56	87	63	84	63
2	85	54	86	50	83	61	87	53	78	59	85	57	85	55	84	52	86	54	82	60	87	62	83	60
3	85	57	89	54	84	62	87	56	80	61	87	61	87	58	89	57	88	60	92	62	88	61	86	61
4	87	55	84	61	86	55	82	59	85	66	83	60	78	57	84	60	71	54	86	60	75	58	74	55
5	74	51	85	55	76	51	80	56	83	63	79	57	75	52	83	54	79	52	86	58	80	55	77	53
6	73	50	84	55	76	56	80	57	80	62	82	59	75	58	83	56	83	54	90	56	86	55	83	55
7	77	61	82	65	80	62	86	60	78	70	79	65	85	63	83	63	81	57	86	58	85	64	83	67
8	74	54	76	64	69	54	75	65	73	64	77	63	75	60	78	63	73	56	77	61	79	58	72	56
9	74	45	79	50	74	48	76	55	78	58	77	54	80	46	79	49	78	43	81	52	79	46	77	47
10	81	50	86	49	81	55	84	51	81	58	84	56	85	54	84	53	86	47	86	53	86	49	84	50
11	86	55	91	53	86	62	88	54	80	65	88	60	90	54	88	58	90	51	90	56	88	56	87	57
12	81	52	90	57	79	56	89	57	86	66	87	61	84	63	87	67	76	58	90	62	81	65	81	59
13	69	43	78	50	69	47	77	51	78	59	74	54	74	46	76	49	72	43	81	50	74	47	71	49
14	70	39	75	46	70	44	74	48	74	56	72	49	73	43	74	46	72	38	77	48	69	44	68	45
15	73	40	83	46	73	51	79	45	76	57	78	48	78	45	79	47	79	44	85	48	82	46	79	44
16	66	58	85	55	76	61	81	58	80	64	82	60	83	64	82	60	80	55	88	55	89	57	84	55
17	71	57	84	60	75	61	81	61	79	67	80	64	78	63	80	63	80	60	85	60	83	68	80	66
18	79	59	78	64	80	65	79	62	75	68	81	60	80	65	81	66	82	60	90	65	82	65	78	56
19	80	56	86	64	76	64	86	60	79															

Climatological Data for May, 1910.
DISTRICT No. 3, OHIO VALLEY.

FERDINAND J. WALK, District Editor.

GENERAL SUMMARY.

After the very cold weather which prevailed during the latter half of April, May opened very promising with high temperatures and warm sunshine the first 2 days. But on the 3d a decided change to colder weather set in and continued with but little interruption during the remainder of the month. In fact, on these first 2 days the highest temperatures of the month were registered at a majority of the stations in the district. The only other days during the month when the temperature was normal in any part of the district were the 10th, 11th, and the 20th to 24th, inclusive. The month, as a whole, averaged in temperature from 4° to 7° below that usual for May, and over much of the district it was the coldest May for which there are authentic records. May, 1907, which holds the record in this connection at most places in this district, previous to this year, still stands the coldest May in the States north of the Ohio River and in West Virginia, while in Tennessee the mean temperatures for May, 1907, and 1910 are practically the same. On the 5th and 6th and the 14-15th freezing temperatures and frost were experienced in all parts of the district, these conditions extending even to the more southerly sections. Freezing temperature and frost were again experienced at quite a few places in Ohio and the mountain sections of the district during the last week of the month. One of the most noteworthy features of the month was the remarkably cold weather so general on the 31st, when the average temperature ranged from 8° to 28° below normal in the various parts of the district; minimum temperatures were near freezing in the more northern and eastern portions, killing frost formed at elevated stations in West Virginia, and snow flurries occurred in some of the mountain portions of that State. This is probably the coldest day in recent years so general in this part of the country at so late a date in the season.

The month, as a whole, was largely cloudy, rainy, and disagreeable; and while the monthly rainfall was above normal, to any considerable amount, only in parts of the extreme southern portion, yet, on account of the unusual frequency of rains and rainy days, the month should be classed as rainy, and to such an extent as to interfere considerably with farm work. The unusually cold and rainy weather kept all vegetation and crops, except grass, in a backward state, and at the end of the month there was a great need of warm sunshine.

TEMPERATURE.

The average daily temperature for the month ranged from 4° to 7° below the normal for May in practically all parts of the district. At most places the average temperature was equally, or nearly, as low as has ever been recorded in May, and in many localities it was the lowest of record for that month. The month opened warm, the mean temperature during the first two days ranging from 8° to 14° above normal, and the maximum temperatures registering between 80° and 90°. Following a general storm, however, which moved into the Ohio Valley by the 3d, very cool weather set in and continued until the 9th. During this whole period the temperature averaged unusually low for the season, the deficiency ranging from 6° to 14°. Some remarkably low temperatures were recorded on the 5th and 6th. In western Maryland minimum temperatures of 16° to 18° were registered on the morning of the 6th; in Pennsylvania, 24° to 30°; in West Virginia, 22° to 30°; in Ohio, 27° to 30°; in the remaining States north of the Ohio River and in Kentucky, 32° to 40°. Damaging frosts were quite general in the eastern part of the district as far south as Virginia and North Carolina. On the 10th and 11th consider-

ably warmer weather prevailed and the temperatures at most places were slightly above normal, but from the 11th to the end of the month, except during a short period from the 20th to the 23d, inclusive, when the temperatures were normal, or slightly above, the weather was persistently cold, with average temperatures 6° to 25° below the seasonal normal. On the 14th and 15th some remarkably low temperatures were again registered, as follows: In North Carolina and western Virginia they were between 19° and 35°; in Kentucky, between 30° and 40°; in Tennessee between 25° and 35°; in northern portions of Alabama and Georgia, between 33° and 40°; and freezing or slightly below in the other States of the district. Light to heavy frosts occurred on these dates over the larger portion of the district.

The last day of the month was probably the coldest in nearly all parts of the district ever recorded that late in May. The average temperatures on the 31st ranged from 8° to 28° below normal, and minimum temperatures of 31° to 45° were registered at many stations in the northern and eastern portions of the district. Killing frosts occurred on the 28th and 31st at elevated stations in West Virginia and North Carolina, and light frost occurred on the 28th in the Cumberland Mountain section of Tennessee.

PRECIPITATION.

Rains were of frequent occurrence during the entire month. On the 2d and 3d an extensive rain area moved into the Ohio Valley, bringing general showers, mostly thunderstorms, on those days, being followed by the cold weather already mentioned. From the 6th to the 8th a general storm advanced from the Southwest, causing general rains and thunderstorms over nearly the whole of the district. The rainfall was heavy and the thunderstorms were quite severe in some sections, especially in Kentucky and eastern Tennessee. Another general disturbance, attended by thundershowers, passed over the Ohio Valley on the 11th and 12th. From the 16th to 25th rain was more or less general over the district every day, due to a series of marked storm areas (mostly from the eastern slope of the Rocky Mountains), which moved eastward over the Mississippi and Ohio valleys. Some very heavy rains occurred over the Tennessee and upper Cumberland watersheds about the 24-25th.

Thunderstorms occurred in practically every part of the district on the 29th, nearly every station reporting such storms. Hail and wind squalls attended these thunderstorms in many localities, and some minor damage from these causes was reported from West Virginia and Tennessee.

Excessive 24-hour rainfalls occurred over portions of the Tennessee watershed on the 7th, 8th, 19th, and 20th. At Brevard, Tenn., 4.77 inches of rain fell within 24 hours on the 7-8th.

The total rainfall for the month was about normal over the greater portion of the district. It was decidedly in excess, however, over considerable of the southern portion. There was a slight deficiency in western Pennsylvania and north-eastern Ohio, and a considerable deficiency in southwestern Tennessee and southwestern Virginia. Over the Tennessee watershed, and over the Cumberland watershed of south-central Kentucky and western Tennessee, the amount of precipitation for the month exceeded 6 inches. The amount about the headwaters of the Tennessee was from 9 to 10 inches in North Carolina and Georgia, and from 7 to 8.5 inches in Alabama. Over the greater part of the central portion of the district, i. e., that portion nearest the Ohio River, the amounts were from 4 to 5 inches. Over the upper watershed of the

Wabash in Illinois it was between 5 and 6 inches, and over the remainder of the district between 2.5 and 4 inches.

Traces of snow occurred in the northern and mountain sections of West Virginia on the 14th and in portions of Grant and Preston counties on the 31st.

MISCELLANEOUS.

May 4.—Lightning struck and burned a large barn on a farm near Maysville, Ky. The barn was filled with corn, oats, and other farm products, all of which were destroyed, besides 2 horses and a buggy.

May 5.—Lightning struck and killed one man and injured another in Owsley County, Ky. The men had taken shelter under an oak tree.

May 11.—Lightning struck Christ Church Cathedral in Louisville, Ky., damaging the steeple and injuring a woman who was passing. The same day lightning struck the Second Presbyterian Church in New Albany, Ind., damaging the steeple and roof.

May 12.—Two mules were killed by lightning and a man who was riding one of them was severely stunned in Ballard County, Ky.

May 14.—Near Owensboro, Ky., a woman was killed by

lightning while talking over the telephone. At the same place on the 24th high winds did considerable damage to trees and small buildings.

May 22.—A severe local storm passed over Cairo, Ill., demolishing 4 residences, destroying several barns, and tearing many trees up by the roots. No fatalities were reported, but several persons were injured.

May 29.—Several hail and wind storms did considerable damage in south-central Kentucky and north-central Tennessee. Near Leitchfield, Ky., the hailstones were of extraordinary size and damaged windows, roofs, fruit trees, and crops. At Nashville, Tenn., the hailstones were of unusual size (some measuring 1 inch in diameter) and, as the wind was blowing at the rate of 44 miles per hour at the time of the hailstorm, much damage resulted. Similar conditions were reported from many other places in various parts of Tennessee. During the night of May 29-30 a severe storm, with tornadic characteristics, swept over the Elk River Valley region, near Charleston, W. Va., killing 1 man and many head of live stock, wrecking scores of buildings, and destroying valuable timber on hundreds of acres of land. The amount of damage is estimated at over \$100,000.

TABLE 1.—Climatological data for May, 1910. District No. 3, Ohio Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
New York.																				
Allegany	Cattaraugus.	1,441	4	52.5		79	21†	25	13	44	3.73		1.05	T.	17	9	8	14	nw.	Charles E. Whitney.
Bolivar	Allegany.	1,800	16	52.6	— 3.0	79	21†	22	6	48	3.65	— 0.38	0.78	0.0	12	5	5	19	sw.	Lowell Andrus.
Franklinville	Cattaraugus.	1,598	13	52.2	— 2.3	77	21†	25	13	41	3.57	— 0.01	0.99	0.0	14	5	7	19	nw.	Dr. John W. Kales.
Olean	do		2								3.70		1.16	0.0	17	17	6	8	w.	John W. Allen.
Pennsylvania.																				
Aleppo	Greene.	1,135	9			83	2	27	6		4.18		0.74	T.	12	13	10	8	sw.	J. S. Hinerman.
Baldwin	Butler.	1,404	4	54.2		80	22†	28	6	36	3.48		0.70	0.0	15	10	16	5	w.	S. H. Templeton.
Claysville	Washington	1,127	6	58.0		87	2	24	6	49	4.71		0.92	0.0	12	10	13	8	w.	E. T. Buchanan.
Franklin	Venango.	955	36	54.4	— 4.0	81	24	30	6†	46	2.83	— 0.52	0.80	0.0	7	13	7	11	w.	F. E. Dixon.
Greenville	Mercer	950	14	54.6	— 3.1	82	22†	26	6	44	4.49	+ 1.10	1.02	0.0	15	17	5	9	w.	A. M. Orr.
Indiana	Indiana	1,350	13	57.6	— 2.3	84	22	27	6	41	3.85	— 0.60	1.05	0.0	13	13	5	12	s.	Rev. J. M. Welch.
Johnstown	Cambria.	1,154	22	57.1	— 4.2	88	2	30	6	42	3.52	— 0.81	0.66	0.0	17	11	17	3	sw.	E. C. Lorens.
Lycippus	Westmoreland	1,420	18	58.2	— 2.9	84	23†	32	6†	31	3.15	— 0.78	0.80	0.0	1					Murray Forbes.
Pittsburg	Allegheny	842	40	57.8	— 4.8	83	2	36	6	29	3.24	— 0.06	0.78	0.0	17	8	12	11	nw.	U. S. Weather Bureau.
Sangerstown	Crawford	1,116	19	53.3	— 3.7	80	23†	25	6	43	3.37	— 1.38	0.93	0.0	17	4	12	15	n.	J. C. Apple.
St. Marys	Elk	1,740	12	52.9	— 3.7	80	22†	29	6†	36	3.25	— 0.69	0.48	T.	15	10	13	8	sw.	Wm. E. Wittmar.
Skidmore	Lawrence	1,000	6	54.0		83	22	26	6	40	3.10		0.60	0.0	10	19	3	8	sw.	W. H. Stoner.
Somerset	Somerset.	2,250	54	55.2	— 1.7	86	2	25	6†	38	3.34	— 2.03	0.62	0.0	12	3	20	8	nw.	W. M. Schrock.
Uniontown	Fayette	999	22	57.9		87	23	29	6	39	3.86		0.81	0.0	16	2	19	10	n.	Wm. Hunt.
Warren	Warren.	1,137	21	52.8	— 3.9	79	22†	27	6†	39	3.02	— 1.77	0.96	0.0	9	16	0	15	n.	Anna Simpson.
Maryland.																				
Deer Park	Garrett.		16	52.8	— 3.8	87	2	16	6	47	4.09	— 0.54	0.74	0.0	14					S. P. Specht.
Grantsville	do.		16	53.0	— 4.3	80	2†	25	6	34	4.06		1.00	0.0	9	6	18	6	w.	J. S. Miller.
Oakland	do.		10	53.4	— 2.0	83	2†	18	6	44	3.43		0.65	T.	16	7	13	9	w.	R. E. Weber.
West Virginia.																				
Arboreale	Pocahontas.		2			88	2	31	6	37	5.87		1.42	0.0	12	9	3	19	sw.	Uriah Hevener, jr.
Bancroft	Putnam		6	58.6		88	2	31	6	37	5.87		1.42	0.0	12	9	3	19	sw.	James Hill.
Beckley	Raleigh	2,440	11	56.9	— 2.8	86	23†	30	5†	42	2.49	— 0.35	0.60	0.0	5	14	0	17	w.	John A. Ewart.
Ben's Run	Pleasants	622	9	58.5		87	2	32	6	44	4.78		0.70	0.0	16	15	7	9		J. D. Riggs.
Bluefield	Mercer	2,563	15	57.6	— 5.0	83	2	31	6	38	3.50	— 1.06	0.63	0.0	12	15	8	8		Norfolk & Western Ry.
Buckhannon	Upshur	1,472	20	58.0	— 4.8	87	19†	25	6	49	4.49	— 0.05	0.67	0.0	16	17	2	12		H. A. Darnall.
Cairo	Ritchie	667	8	60.0		88	1†	27	6	40	4.34		0.52	0.0	16	3	15	13	sw.	Van A. Zevilly.
Central Station	Doddridge	900	11	55.4	— 6.9	87	2	23	6	43	4.75	+ 1.22	0.34	0.0	17	3	16	10	w.	G. W. Sherwood.
Charleston	Kanawha	598	24	61.6		88	2	35	6	32	4.93	+ 0.87	1.31	0.0	8	15	9	7	w.	R. C. Hewes.
Creston	Wirt	612	10	60.2		89	2	30	6	41	3.83	+ 0.14	0.90	0.0	7	9	7	15	w.	J. M. Reed.
Cuba	Jackson	544	9	57.7		86	2	27	6	40	4.43	+ 1.08	0.67	0.0	14	7	20	4	w.	C. T. Perry.
Doane	Wayne		5																	W. H. Jude.
Elkhorn	McDowell	1,933	18	58.2	— 4.8	84	1†	29	15	41	3.54	— 1.11	0.65	T.	8	16	5	10	w.	J. J. Lincoln.
Elkins	Randolph	1,940	11	55.2	— 3.9	86	23	25	6	39	3.91	— 0.07	1.00	T.	18	9	10	12	w.	U. S. Weather Bureau.
Fairmont	Marion	879	18	58.1		89	2	24	6	47	3.92		0.55	0.0	13					H. Glenn Fleming.
Glennville	Gilmer	738	22	60.0	— 3.1	89	2	28	6	42	4.62	+ 0.41	1.05	0.0	10	8	7	16		John Holt.
Grafton	Taylor	985	18	58.6	— 3.3	88	2	25	6	45	3.78	— 0.65	0.69	0.0	13	11	14	6		John W. Snider.
Green Sulphur Springs	Summers	1,600	14	56.8	— 5.0	90	23	27	6†	50	3.55	— 0.11	0.60	0.0	12	18	6	7	w.	John W. Dalton.
Hinton	do	1,400	21								3.39	— 0.66	0.94	0.0	12				sw.	V. V. Daly.
Huntingdon	Cabell	510	15	60.4	— 4.6	89	2	33	6	39	5.16	+ 1.32	1.30	0.0	10	15	2	14	w.	L. H. Hutchinson.
Lewisburg	Greenbrier	2,200	10	56.0	— 5.0	85	2	28	6	41	2.29	— 1.88	0.73	T.	10	15	5	11	w.	Geo. T. Afghabrite.
Logan	Logan	665	8	62.8		93	2	35	6	41	5.33		1.20	0.0	13	6	24	1	w.	H. C. Ragland.
Lost Creek	Harrison	1,033	14	56.7	— 4.7	87	1†	22	6	42	4.13	— 0.66	0.59	0.0	17	11	7	13	w.	Allen Smith.
Madison	Boone	704	5																	S. E. Bradley.
Mannington	Marion	967	7	57.4		87	2	25	6	43	4.64		0.79	0.0	17	9	14	8	sw.	Jas. A. Morgan.
Marlinton	Pocahontas	2,169	11			76	1†	23	6	40	2.67		0.56	0.0	8					C. J. McCarty.
Morgantown	Monongalia	1,250	36	57.8	— 4.8	84	2	30	6	38	3.69	+ 0.03	0.90	0.0	11	11	11	9	s.	Horace Atwood.
Moundsville	Marshall	640	8	58.2		87	2	29	6	40	3.89		0.90	0.0	14	14	6	11	nw.	J. E. Matthews.
New Cumberland	Hancock	987	10	56.6	— 4.2	84	2	28	6	40	3.75	+ 0.21	0.80	0.0	12	8	6	17	sw.	Frank S. Evans.
New Martinsville	Wetzel	634	17	58.6	— 5.2	87	2	30	6	40	3.79	+ 0.09	0.87	T.	13	16	5	10	s.	Wm. Ankrum.
Nuttallburg	Fayette	2,252	18	54.8	— 7.6	84	1	28	6	40	1.55	— 2.13	0.42	0.0	12	9	14	8		Stephen Tully.
Parkersburg	Wood	638	22	58.8	— 4.5	86	2	35	6	34	3.34	— 0.12	0.78	0.0	13	8	10	13	n.	U. S. Weather Bureau.
Parsons	Tucker	1,662	11	55.3	— 4.3	86	23	22	6	45	4.87	+ 0.68	1.00	0.0	13	10	17	4		J. W. Swisher.
Philippi	Barbour	1,192	18	57.3	— 4.6	86	2†	25	5	49	3.32	— 1.22	0.49	0.0	15	10	12	9	nw.	J. D. Dadiaman.
Pickens	Randolph	2,755	20	54.9	— 3.9	88	2	25	6	44	5.26	+ 0.09	1.18	T.	13	12	7	12	w.	Dr. J. L. Cunningham.
Pineville	Wyoming		2																	E. M. Senter.
Point Pleasant	Mason	553	21	60.0	— 6.1	88	2	29	6	38	3.86	+ 0.13	1.00	0.0	11	11	3	17	se.	E. H. Armstrong.
Powellton	Fayette	904	14	61.4		88	1†	31	5	43										D. Swain.
Princeton	Mercer	2,469	10	54.0		78	23	25	15	36	5.70	— 0.18	1.30	0.0	10	12	10	9	w.	H. Scott.
Robertson	Putnam		1	58.6		86	2	29	6	39	4.39		1.10	0.0	11	12	3	16	n.	E. P. Turley.
Ryan	Roane	639	7	57.0		88	1	26	6	47	4.90		0.81	0.0	13	8	10	13		Wm. E. Ryan.
Smithfield	Wetzel		6	56.2		84	2	29	6	38	4.56		1.17	0.0	11	18	3	8	ne.	G. M. Whider.
Spencer	Roane	710	7	57.9		92	1†	24	6	49	5.06	+ 1.58	1.07	0.0	7	3	27	1		A. M. McKown.
Sutton	Braxton		5	62.0		93	23	30	5	44						11	5	15		J. E. Baughman.
Terra Alta	Preston	3,207	10	56.2	— 3.1	80	2†	25	6	41	5.05	— 0.27	1.14	T.	8	13	6	12	w.	C. F. Dodge.

TABLE 1.—Climatological data for May, 1910. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Ohio—Cont'd.																				
Frankfort.	Ross.	750	18	58.8	- 4.0	87	2	30	51	45	3.67	+ 0.10	0.98	0.0	8	12	9	10	s.	O. A. Cory.
Garrettsville.	Portage.	1,005	26	53.6	- 3.3	80	2	25	61	42	4.10	+ 0.29	1.31	0.0	14	8	6	17	nw.	S. M. Luther.
Granville.	Licking.	960	28	55.8	- 4.8	82	11	28	61	39	4.84	+ 1.24	0.82	0.0	15	16	0	15	w.	Dr. L. E. Davis.
Gratiot.	do.	1,000	21	55.8	- 5.0	82	1	25	6	42	3.46	- 0.10	0.82	0.0	13	7	16	8	sw.	W. B. Longstreet.
Green.	Adams.	500	17	59.2	- 5.0	86	15	31	61	53	4.26	+ 0.49	1.25	0.0	8	13	12	6	n.	W. F. Kenyon.
Green Hill.	Columbiana.	1,135	18	53.0	- 5.1	80	21	23	6	42	2.46	- 0.76	0.41	0.0	18	7	18	6	sw.	Jos. E. Bentley.
Greenville.	Darke.	1,060	24	57.2	- 3.5	82	21	34	41	39	3.24	- 0.68	1.08	0.0	13	10	10	11	nw.	G. A. Katzenberger.
Hillsboro.	Highland.	1,063	31	57.2	- 5.0	82	2	33	51	31	4.32	+ 0.85	1.02	0.0	10	3	22	6	sw.	Carey H. Roush.
Ironton.	Lawrence.	575	27	60.3	- 3.1	88	2	32	61	36	5.13	+ 1.44	1.20	0.0	12	13	8	10	sw.	James Bull.
Jacksonburg.	Butler.	975	42	56.8	- 5.7	82	2	33	5	34	4.70	+ 1.06	1.12	0.0	16	8	13	10	nw.	Dr. J. B. Owsley.
Kenton.	Hardin.	1,015	18	54.6	- 5.6	80	21	27	15	39	3.39	- 0.65	0.77	0.0	16	8	13	10	n.	N. S. Martin.
Killbuck.	Holmes.	1,087	18	55.8	- 4.7	82	21	26	6	40	5.22	+ 1.58	0.69	0.0	15	7	18	6	n.	Geo. W. Nowels.
Lancaster.	Fairfield.	898	15	57.7	- 4.6	83	2	31	51	32	3.70	- 0.61	0.80	0.0	16	15	3	13	sw.	R. L. Renshaw.
Lawsville.	Adams.	900	7	58.2	- 5.4	84	2	27	15	39	3.41	- 0.66	0.66	0.0	15	11	9	10	w.	Miss Ruth Hoffman.
McConnelsville.	Morgan.	710	26	56.6	- 5.4	84	2	26	6	36	3.66	+ 1.85	1.74	0.0	15	5	16	10	s.	C. H. Morris.
Marietta.	Washington.	627	90	59.1	- 3.8	86	2	31	6	40	4.39	+ 0.52	0.70	0.0	17	8	13	10	n.	Dr. E. H. Raffensperger.
Marion.	Marion.	980	32	57.3	- 3.9	85	21	27	6	34	4.54	+ 0.91	1.12	0.0	12	9	16	6	sw.	L. H. Burgess.
Millfordton.	Knox.	1,200	18	55.4	- 4.0	80	21	27	6	34	3.69	+ 0.78	0.84	0.0	12	9	16	6	sw.	Dr. E. H. Raffensperger.
Milligan.	Perry.	875	17	55.5	- 6.3	86	2	22	6	42	6.21	+ 2.82	1.21	0.0	16	11	11	9	nw.	V. C. Eveland.
Millport.	Columbiana.	1,145	18	53.8	- 5.7	80	11	25	61	40	3.84	+ 0.78	1.00	0.0	13	14	7	10	w.	G. F. Copeland.
Nellie.	Coshocton.	850	10	54.6	- 6.8	82	2	24	8	40	4.90	+ 0.31	0.76	0.0	13	14	7	10	w.	Miss Ethel L. Gamertsfelder.
New Alexandria.	Jefferson.	1,050	25	56.8	- 4.6	86	1	28	61	40	3.68	+ 0.12	1.00	0.0	16	18	3	10	nw.	Mrs. Mary K. Pennell.
New Berlin.	Stark.	1,100	18	54.4	- 5.3	81	21	28	61	42	3.26	- 0.11	0.0	0.0	8	15	8	sw.	Clayton Holl.	
New Waterford.	Columbiana.	1,053	16	57.5	- 3.5	82	11	27	61	35	3.51	- 0.48	0.74	0.0	12	5	14	12	sw.	Sam. C. Scott.
Ohio State University.	Franklin.	757	27	56.7	- 4.5	81	2	30	61	37	4.11	+ 0.49	0.95	0.0	15	5	19	7	nw.	Prof. H. C. Lord.
Pataskala.	Licking.	997	18	55.9	- 5.4	82	2	30	6	35	4.80	+ 1.21	1.02	0.0	15	11	8	12	sw.	J. N. Ridenour.
Philo (I).	Muskingum.	1,018	15	56.8	- 6.0	84	11	30	6	35	4.90	+ 1.21	1.02	0.0	15	11	8	12	sw.	L. C. Burckholter.
Plattsburg.	Clarke.	1,130	17	56.1	- 5.4	80	11	31	51	35	5.47	+ 2.02	0.83	0.0	18	9	13	9	w.	F. E. Stewart.
Pomeroy.	Meigs.	781	26	59.2	- 6.0	87	2	34	6	37	3.40	- 0.03	0.49	0.0	15	7	13	11	nw.	W. G. Branch.
Portsmouth.	Scioto.	527	79	59.0	- 5.1	82	2	28	5	45	4.23	+ 0.53	0.63	0.0	13	11	5	15	n.	Dr. H. A. Schirrmann.
Rittman.	Wayne.	990	18	53.6	- 6.3	79	21	26	6	40	3.49	- 0.51	1.00	0.0	14	4	17	10	sw.	J. B. Gish.
Shenandoah.	Richland.	1,100	18	52.5	- 5.4	80	21	31	5	38	4.61	+ 0.28	1.26	0.0	17	11	6	14	sw.	T. B. Arnett.
Sidney.	Shelby.	985	27	57.4	- 4.3	83	21	32	5	35	5.12	+ 1.25	1.54	0.0	15	15	9	7	s.	Hamline B. Blake.
Somerset.	Perry.	1,080	11	57.7	- 5.5	83	21	32	5	35	4.46	+ 1.15	0.99	0.0	16	7	18	6	s.	Miss M. W. C. Sheridan.
Springfield.	Clarke.	1,002	16	55.8	- 5.8	84	2	24	6	43	4.14	- 0.75	0.75	0.0	15	6	18	7	s.	W. A. Webster.
Summerfield.	Noble.	1,187	4	59.5	- 4.8	88	11	31	6	37	3.96	+ 1.11	0.62	0.0	11	5	13	13	w.	H. R. McClintock.
Thurman.	Gallia.	696	17	57.0	- 4.3	83	11	28	5	40	5.14	+ 1.64	1.63	0.0	13	5	19	7	nw.	D. D. Thomas.
Urbana.	Champaign.	1,031	40	55.1	- 3.5	84	22	27	15	40	3.05	- 0.83	0.62	0.0	15	5	13	13	sw.	Prof. J. H. Williams.
Warren.	Trumbull.	990	31	56.7	- 7.4	87	2	26	61	41	3.42	- 0.38	0.83	0.0	14	14	6	11	s.	M. D. McCorkle.
Waverly.	Pike.	390	27	56.7	- 7.4	87	2	26	61	41	3.42	- 0.38	0.83	0.0	14	14	6	11	s.	David Lorbach.
Waynesville.	Warren.	700	25	56.4	- 5.9	81	11	34	5	33	4.34	+ 0.34	0.72	0.0	13	11	9	11	sw.	Charles Michener.
Wooster.	Wayne.	1,030	30	54.8	- 3.8	82	28	25	6	47	4.87	+ 0.95	1.05	0.0	17	8	6	17	nw.	Experiment Station.
Youngstown.	Maoning.	846	18	56.8	- 3.8	82	28	25	6	47	2.17	- 1.27	0.50	0.0	12	19	0	12	w.	G. R. Patton.
Zanesville.	Muskingum.	700	23	56.8	- 3.8	82	28	25	6	47	3.49	- 0.10	0.74	0.0	16	19	1	11	w.	S. G. Sprague.
Virginia.																				
Big Stone Gap.	Wise.	1,540	19	59.5	- 3.5	83	1	33	15	42	5.55	+ 1.46	1.25	0.0	13	13	6	12	w.	John W. Fox, sr.
Blacksburg.	Montgomery.	2,170	19	56.0	- 4.7	84	2	26	15	42	4.18	+ 0.35	0.70	0.0	12	13	8	10	w.	Agricultural Exp. Station.
Burkes Garden.	Tazewell.	3,250	15	52.6	- 3.6	77	22	19	15	46	4.07	- 0.89	0.80	0.0	9	10	6	15	w.	C. H. Greener.
Elk Knob.	Lee.	3,243	7	59.5	- 5.0	81	1	35	15	32	5.80	- 0.89	1.00	0.0	17	15	7	9	sw.	Henry Nicoll.
Galax.	Grayson.	2,300	2	57.2	- 5.0	83	1	25	15	40	2.91	- 0.96	0.96	0.0	7	13	12	6	nw.	E. C. Williams.
Ivanhoe.	Wythe.	2,028	6	58.1	- 6.3	80	11	34	15	28	3.90	- 0.78	0.78	0.0	15	13	15	3	w.	Miss Alice G. Jewett.
Lebanon.	Russell.	2,131	11	58.2	- 6.3	81	22	26	14	40	2.92	- 0.79	0.79	0.0	9	14	6	11	sw.	R. D. Swain.
Marion.	Smyth.	2,224	15	57.3	- 4.8	82	2	29	61	41	2.99	+ 1.18	1.16	0.0	9	16	12	3	w.	S. W'n State Hospital.
Max Meadows.	Wythe.	2,028	14	56.4	- 6.1	84	2	28	61	39	4.20	+ 0.30	1.15	0.0	10	18	6	7	w.	James M. Graham.
Mendota.	Washington.	1,350	4	57.3	- 4.8	82	2	29	61	41	2.99	+ 1.18	1.16	0.0	9	16	12	3	w.	Frank M. Baker.
Radford.	Montgomery.	1,773	4	57.3	- 4.8	82	2	29	61	41	2.99	+ 1.18	1.16	0.0	9	16	12	3	w.	Arthur Roberts.
Spears Ferry.	Scott.	1,221	14	57.3	- 4.8	82	2	29	61	41	2.99	+ 1.18	1.16	0.0	9	16	12	3	w.	Mrs. L. E. Venable.
Wytheville.	Wythe.	2,293	17	57.2	- 4.2	82	2	28	15	37	2.56	- 1.35	0.32	0.0	14	16	5	10	w.	U. S. Weather Bureau.
North Carolina.																				
Andrews.	Cherokee.	1,800	...	61.3	- 3.7	85	11	33	15	40	10.06	+ 0.87	2.67	0.0	15	13	12	6	sw.	J. D. Link.
Asheville.	Buncombe.	2,250	31	58.9	- 3.7	85	1	34	15	36	4.65	+ 0.87	1.77	0.0	16	14	6	11	nw.	U. S. Weather Bureau.
Banners Elk.	Watauga.	3,750	2	52.6	- 3.7	80	1	22	15	44	4.29	- 0.89	1.25	0.0	14	17	3	11	w.	T. L. Lowe.
Brevard.	Transylvania.	2,230	9	59.8	- 3.8	86	1	29	14	46	8.76	- 0.77	4.77	- 0.13	13	19	4	8	s.	W. E. Broese.
Bryson City.	Swain.	2,000	22	59.2	- 3.8	86	1	29	14	45	7.17	- 0.7								

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 1.—Climatological data for May, 1910. District No. 3—Continued.

TABLE 1.—Climatological data for May, 1910.																				District No. 3.—Continued.									
Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.					Observers.										
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		Prevailing wind direction.									
Tennessee—Cont'd.																				Lee F. Miller.									
Elizabethton	Carter	1,575	20	58.9	- 3.7	84	1	31	14	45	5.87	+ 1.37	1.43	0.0	15	13	5	se.	Mrs. E. D. Ashley.										
Erasmus	Cumberland	1,850	13	63.9	- 3.9	84	11	39	15	31	5.46	+ 1.57	0.90	0.0	13	15	6	10	s.	Erastus P. Bell.									
Florence	Rutherford	560	28	63.4	- 4.2	84	11	38	15	32	6.10	+ 2.22	1.60	0.0	11	11	5	15	...	J. L. Parkes, Jr.									
Franklin	Williamson	655	20	63.4	- 3.1	89	29	39	14	46	5.58	+ 1.99	0.0	0.0	13	11	15	5	...	Robert R. Ayers.									
Harriman	Roane	841	15	64.3	- 3.5	85	11	35	14	44	7.14	+ 3.02	3.70	0.0	10	13	12	6	s.	John Lutzelman.									
Hohenwald	Lewis	983	24	63.3	- 3.6	88	29	33	14	40	5.01	+ 0.83	1.32	0.0	12	2	27	2	nw.	Capt. H. P. Seavy.									
Iron City	Lawrence	364	14	64.1	- 5.0	89	29	35	15	38	4.04	+ 0.34	0.75	0.0	13	12	7	12	s.	Miss Sallie B. Matthews.									
Johnsonville	Humphreys	1,740	15	58.9	- 5.6	85	1	32	6	39	5.42	+ 0.80	0.0	0.0	11	14	3	14	ne.	Robert A. Lovegrove.									
Jonesboro	Washington	977	39	63.1	- 3.4	84	1	40	14	32	7.28	+ 3.58	1.57	0.0	15	10	13	8	sw.	U. S. Weather Bureau.									
Knoxville	Knox	522	1	63.1	- 5.2	86	29	37	15	40	6.55	+ 0.94	0.0	0.0	15	9	6	16	s.	Logan Fields.									
Lebanon	Wilson	727	15	63.0	- 5.0	89	29	34	15	40	6.32	+ 2.76	1.49	0.0	13	14	4	13	s.	Dr. R. D. Crutcher.									
Lewisburg	Marshall	727	15	63.4	- 5.0	85	11	39	14	32	5.40	+ 1.05	1.68	0.0	11	15	11	5	n.	Col. J. H. Burrow.									
Lynnville	Giles	1,011	26	62.8	- 4.5	85	11	37	14	36	6.08	+ 2.95	0.95	0.0	15	13	9	9	sw.	J. T. Sparkman.									
McMinnville	Warren	1,050	14	63.4	- 4.6	85	1	25	15	45	4.51	+ 0.26	0.73	0.0	12	17	9	5	...	Mrs. F. E. Benedict.									
Maryville	Blount	2,486	13	56.8	- 4.8	85	1	42	15	31	5.81	+ 2.31	1.43	0.0	14	12	7	12	sw.	E. E. Barry.									
Mountain City	Johnson	654	39	64.8	- 4.0	86	11	42	15	31	5.81	+ 2.31	1.43	0.0	14	12	7	12	sw.	U. S. Weather Bureau.									
Nashville	Davidson	1,280	20	60.8	- 5.7	82	1	36	15	35	5.05	+ 0.84	1.00	0.0	9	17	5	9	w.	Dr. C. T. Burnett.									
Newport	Coke	770	17	63.6	- 4.9	88	29	36	15	38	3.60	- 0.40	1.12	0.0	8	19	2	10	s.	Mrs. Ross Woods.									
Palmetto	Bedford	770	17	63.6	- 4.9	88	29	36	15	38	3.60	- 0.40	1.12	0.0	8	19	2	10	s.	Miss Carrie Cash.									
Pinewood	Hickman	1,130	25	61.2	- 3.6	84	1	34	15	37	5.03	+ 1.39	1.26	0.0	12	11	10	10	sw.	Miss Bessie Howard.									
Pope	Perry	1,410	22	59.6	- 4.6	86	1	29	14	44	7.64	+ 3.49	2.18	0.0	5	15	9	7	sw.	Fred Beal.									
Rogersville	Hawkins	1,410	22	59.6	- 4.6	86	1	29	14	44	7.64	+ 3.49	2.18	0.0	5	15	9	7	sw.	S. G. Wilson.									
Rugby	Morgan	442	26	65.4	- 3.6	86	29	37	14	35	2.28	- 2.02	0.90	0.0	12	5	8	18	sw.	J. A. Spencer.									
Savannah	Hardin	442	26	65.4	- 3.6	86	29	37	14	35	2.28	- 2.02	0.90	0.0	12	5	8	18	sw.	H. O. Eckel.									
Sevierville	Sevier	2,000	14	60.2	- 5.8	87	29	41	6	31	6.00	+ 2.14	0.85	0.0	9	14	0	17	sw.	University of the South.									
Sewanee	Franklin	920	4	63.5	- 5.8	88	29	36	14	42	6.08	+ 0.85	0.0	0.0	14	8	12	11	w.	E. H. Hull.									
Sparta	White	1,058	20	63.4	- 4.4	87	29	35	15	35	4.74	+ 1.45	0.80	0.0	12	12	10	9	s.	Mrs. Lucy E. Breeding.									
Springdale	Claiborne	377	7	63.4	- 4.4	87	29	35	15	35	4.74	+ 1.45	0.80	0.0	12	12	10	9	s.	H. A. Boden.									
Springville	Henry	1,075	22	63.3	- 3.6	85	11	33	14	38	4.93	+ 1.45	0.80	0.0	12	12	10	9	s.	R. T. Moore.									
Tullahoma	Coffee	753	24	63.8	- 3.2	86	29	35	14	36	6.16	+ 2.54	1.58	0.0	14	11	8	12	s.	H. C. Boyd.									
Waynesboro	Wayne	13	65.4	- 3.6	89	11	38	14	35	3.96	- 1.28	1.38	0.0	8	13	5	13	s.	W. R. Wilson.										
Wildersville	Henderson	850	13	64.3	- 5.6	86	29	39	13	31	4.71	+ 0.78	1.58	0.0	10	11	9	11	sw.	W. P. Watson.									
Yukon	Lincoln	850	13	64.3	- 5.6	86	29	39	13	31	4.71	+ 0.78	1.58	0.0	10	11	9	11	sw.	W. P. Watson.									
Kentucky.																				W. W. Hicks.									
Alphs	Clinton	700	9	58.6	- 5.5	84	2	33	14	33	4.92	+ 0.95	1.32	0.0	11	14	5	12	sw.	C. E. Barrett.									
Anchorage	Jefferson	637	14	62.0	- 5.2	87	2	35	14	38	3.82	+ 0.78	0.80	0.0	11	14	1	16	sw.	G. M. Talbott.									
Bardonia	Nelson	650	7	59.4	- 5.2	89	2	32	6	42	6.80	+ 1.90	0.0	0.0	12	11	5	15	nw.	G. W. Cann.									
Beattyville	Lee	441	7	62.6	- 5.5	85	2	35	14	36	2.71	+ 0.59	0.0	0.0	10	17	0	14	sw.	T. S. Woodward.									
Beaver Dam	Ohio	1,070	9	61.2	- 5.5	85	1	33	5	38	5.77	+ 1.02	0.0	0.0	10	13	8	9	sw.	C. F. Rumold.									
Berea	Madison	500	21	64.0	- 3.6	88	1	37	14	40	6.25	+ 2.17	1.30	0.0	12	12	4	15	s.	Mrs. L. G. Causey.									
Bowling Green	Warren	773	20	64.0	- 3.6	88	1	37	14	40	6.25	+ 2.17	1.30	0.0	12	12	4	15	ne.	G. M. Estes.									
Burnside	Pulaski	773	20	64.0	- 3.6	88	1	37	14	40	6.25	+ 2.17	1.30	0.0	12	12	4	15	ne.	F. T. Street.									
Cadiz	Trigg	397	7	64.0	- 3.6	88	1	37	14	40	6.25	+ 2.17	1.30	0.0	12	12	4	15	ne.	W. A. Taylor.									
Calhoun	McLean	544	17	62.4	- 4.4	86	2	36	14	38	3.56	- 1.44	1.22	0.0	12	16	1	14	s.	Chas. N. Bruns.									
Catlettsburg	Boyd	370	21	62.4	- 4.4	86	2	36	14	38	3.56	- 1.44	1.22	0.0	12	16	1	14	s.	J. B. Atkinson.									
Earlington	Hopkins	600	19	60.8	- 4.2	83	2	33	14	38	9.00	+ 4.58	2.33	0.0	13	14	8	9	w.	Miss Lee Ray.									
Edmonton	Metcalfe	1,177	16	59.4	- 5.1	85	2	32	14	35	5.82	+ 2.12	1.22	0.0	16	16	1	14	sw.	W. H. Henderson.									
Eubank	Pulaski	530	21	60.8	- 4.2	83	2	33	14	38	9.00	+ 4.58	2.33	0.0	13	14	8	9	w.	J. V. Oldham.									
Falmouth	Pendleton	568	5	59.4	- 5.1	87	1	30	15	40	5.62	+ 1.50	0.0	0.0	12	4	17	10	w.	Miss Gertrude Sorrell.									
Farmers	Rowan	560	20	60.0	- 5.3	83	2	37	14	33	5.45	+ 1.49	2.23	0.0	8	3	23	5	nw.	Gustave Schaefer.									
Frankfort	Franklin	691	17	63.4	- 3.5	86	11	37	14	33	5.45	+ 1.49	2.23	0.0	8	3	23	5	nw.	J. E. Newman.									
Franklin	Simpson	581	18	60.1	- 5.0	86	29	33	14	41	6.48	+ 2.56	1.07	0.0	13	12	1	18	s.	L. C. Alcorn.									
Greensburg	Green	762	8	64.2	- 4.0	89	30	39	14	40	3.58	+ 0.91	0.96	0.0	10	15	1	15	s.	Miss Lulu Wood.									
Highbridge	Jessamine	524	14	64.2	- 4.0	89	30	39	14	40	3.58	+ 0.91	0.96	0.0	10	15	1	15	s.	W. F. Randle.									
Hopkinsville	Christian	12	61.8	- 5.2	83	2	37	14	34	3.55	+ 0.04	1.07	0.0	8	16	3	12	sw.	W. J. Piggett.										
Irvine	Breckinridge	635	15	60.9	- 4.3	81	1	39	14	31	5.79	+ 1.41	1.73	0.0	9	16	5	10	nw.	John E. Stone.									
Leitchfield	Grayson	989	23	59.1	- 5.2	82	2	36	14	24	6.24	+ 2.72	2.06	0.0	15	9	12	10	sw.	U. S. Weather Bureau.									
Lexington	Fayette	681	13	61.2	- 4.2	83	1	34	17	38	5.75	+ 2.06	1.21	0.0	10	21	3	6	sw.	Loretto Academy.									
Loretto	Marion	525	38	62.5	- 4.2	86	2	43	14	29	3.96	+ 0.32	1.52	0.0	12	11	6	14	sw.	U. S. Weather Bureau.									
Louisville	Jefferson	525	38	62.5	- 4.2	86	2	43	14	29	3.96	+ 0.32	1.52	0.0	12	11	6	14	sw.	B. C. Paris.									
Louisville	Crittenden	524	14	59.0	- 6.0	88	2	31	15	42	3.89	+ 0.11	0.92	0.0	11	13	7	11	sw.	Mrs. Mary D. Marsh.									
Mayfield	Mason	1,128	17	6																									

TABLE 1.—Climatological data for May, 1910. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Indiana—Cont'd.																				
Kokomo.....	Howard.....	840	18	56.9 ^b	- 5.7	83 ^b	22	31 ^b	14	35 ^b	2.31	- 1.68	0.50	0.0	8	16	1	14	sw.	John W. Doty.
Lafayette.....	Tippecanoe.....	617	31	56.5	- 4.7	80	22	33	14	33	4.24	- 0.17	0.62	0.0	12	14	5	12	s.	Wm. J. Jones, jr.
Logansport.....	Cass.....	620	30	57.5	- 4.7	86	22	31	5 [†]	40	2.90	- 1.34	0.60	0.0	11	16	4	11	e.	Chas. Mammen.
Madison.....	Jefferson.....	460	18	60.5	- 5.0	85	2	35	5 [†]	36	4.27	- 0.19	1.00	0.0	14	15	4	12	w.	Dr. J. Cooperider.
Marengo.....	Crawford.....	363	28	59.6 ^b	.....	85 ^b	9	32 ^b	14	52 ^b	6.80	+ 1.71	1.20	0.0	10 ^b	7 ^b	6 ^b	14	w.	J. M. Johnson.
Marion.....	Grant.....	814	24	56.7	- 4.2	82	22	29	14	37	2.58	- 1.34	0.64	0.0	10	10	7	14	s.	James F. Hood.
Markle.....	Huntington.....	814	15	53.6	- 6.3	90	22	28	5	38	2.40	- 1.44	0.50	0.0	8	12	10	9	sw.	I. S. Shideler.
Mauzy.....	Rush.....	980	30	56.2	- 4.8	80	2	31	5 [†]	38	4.03	- 0.40	0.96	0.0	11	12	7	12	sw.	Elwood Kirkwood.
Moore Hill.....	Dearborn.....	9	9	58.2	.....	82	2	32	14	35	4.57	.....	1.35	0.0	13	14	5	12	sw.	W. S. Bigney.
Mount Vernon.....	Posey.....	410	24	62.3 ^a	- 3.8	90	29	41 ^a	5 [†]	35 ^a	2.63	- 1.10	0.82	0.0	11	18	0	13	s.	Chas. M. Spencer.
Paoli.....	Orange.....	611	13	59.6	- 5.1	81	2	31	14	39	4.63	+ 0.61	1.35	0.0	10	10	13	8	sw.	James A. Gillum.
Princeton.....	Gibson.....	481	28	59.8	- 4.7	84	29	32	14	42	3.15	+ 0.48	0.90	0.0	6	22	3	6	nw.	Elisha Jones.
Richmond.....	Wayne.....	972	25	55.8	- 4.9	81	2	29	5 [†]	40	4.79	+ 0.78	1.05	0.0	13	9	10	12	.....	Walter Vossler.
Rochester.....	Fulton.....	775	7	56.8	.....	81	22	34	14	31	2.98	.....	0.65	0.0	11	16	6	9	.....	G. P. Keith.
Rockville.....	Parke.....	722	24	55.5	- 6.5	78	22	34	14 [†]	26	3.99	- 0.22	0.68	0.0	10	13	7	11	s.	Dr. W. N. Wirt.
Rome.....	Perry.....	370	7	62.8	.....	87	29	35	14	41	4.02	.....	1.25	0.0	14	16	5	10	w.	Adam Anspach.
Salamonia.....	Jay.....	5	5	55.4 ^b	.....	78 ^b	2	28 ^b	5 [†]	40 ^b	3.61	.....	1.06	0.0	12	6 ^a	7 ^a	17 ^a	nw.	Chas. V. Skinner.
Salem.....	Washington.....	717	17	58.9	- 4.9	83	2	32	14	36	5.41	+ 1.66	1.35	0.0	10	13	8	10	w.	Emmet S. Allen.
Scottsburg.....	Scott.....	570	16	61.7 ^a	- 3.8	85 ^a	1 [†]	38 ^a	14	39 ^a	5.49	+ 1.58	1.45	0.0	10	11 ^a	10 ^a	9 ^a	w.	Frank H. Park.
Seymour.....	Jackson.....	610	23	58.8	- 4.8	82	2	31	14	39	3.94	- 0.23	1.01	0.0	11	8	18	5	w.	J. Robt. Blair.
Shelbyville.....	Shelby.....	6	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. F. Crouch.
Terre Haute.....	Vigo.....	498	20	61.6	- 3.2	89	2	37	4	29	4.14	+ 0.03	1.12	0.0	10	16	7	8	nw.	Prof. R. G. Gillum.
Veedsburg.....	Fountain.....	612	11	57.8	- 4.7	82	22	30	14	37	3.65	+ 1.22	1.00	0.0	14	20	4	7	n.	L. A. Culver, jr.
Vevay.....	Switzerland.....	525	29	60.6	- 4.5	83	2	36	14	33	2.55	- 2.09	0.75	0.0	8	7	15	9	sw.	Miss Frederica Boerner.
Vincennes.....	Knox.....	431	18	60.4	- 5.5	85	28	35	14	37	3.76	+ 0.24	0.85	0.0	12	16	4	11	nw.	Garrett V. List.
Washington.....	Daviess.....	484	14	59.6	- 5.0	80	2 [†]	36	14	33	4.06	+ 0.64	0.90	0.0	17	16	5	10	s.	Homer B. Turrell.
Whitestown.....	Boone.....	2	2	55.9	.....	78	22	31	14	38	3.43	.....	1.43	0.0	14	3	24	4	nw.	C. A. Stevenson.
Winona Lake.....	Kosciusko.....	3	3	55.4	.....	83	22	31	14	38	3.86	.....	1.16	0.0	13	5	17	9	nw.	Rev. Albert A. Young.
Worthington.....	Greene.....	526	28	60.4 ^a	- 2.8	81	2 [†]	34 ^a	14	36 ^a	3.04	- 1.02	0.80	0.0	10	15	10	6	s.	D. W. Sollday.
Illinois.																				
Alhion.....	Edwards.....	531	19	61.3	- 4.4	84	20 [†]	38	6 [†]	33	2.69	- 1.62	0.93	0.0	9	13	7	11	s.	B. F. Michels.
Charleston.....	Coles.....	720	25	58.3	- 4.8	82	22	32	4 [†]	34	3.84	- 0.14	0.76	0.0	14	9	12	10	w.	Jacob B. Daiay.
Equality.....	Gallatin.....	421	12	64.5	- 2.5	89	11	37	14	32	2.70	- 0.87	1.01	0.0	10	11	15	5	s.	Dr. L. W. Gordon.
Fairfield.....	Wayne.....	495	17	61.6	- 4.1	84	20 [†]	35	14	35	3.77	- 0.11	1.24	0.0	9	16	0	15	nw.	Geo. A. Tromly.
Flora.....	Clay.....	495	24	60.8	- 3.0	84	10 [†]	35	4 [†]	35	3.17	- 0.87	1.05	0.0	7	14	9	8	nw.	Jos. S. Peak.
Golconda.....	Pope.....	500	32	63.4	- 3.8	86	29	39	14	34	3.58	- 0.59	0.78	0.0	12	8	9	14	sw.	Dr. D. Lawrence.
Hoopeston.....	Vermilion.....	715	8	56.6	.....	81	22	31	4 [†]	34	5.38	.....	1.70	0.0	14	20	4	7	.....	S. F. Hoskinson.
McLeansboro.....	Hamilton.....	462	27	61.2	- 3.7	85	29	36	14	37	2.96	- 0.96	1.05	0.0	8	15	6	10	w.	C. C. Judd.
Martinsville.....	Clark.....	630	22	58.8	- 5.0	83	22	31	4	40	4.63	+ 0.40	1.00	0.0	9	7	14	10	n.	G. M. Daugherty.
Mount Carmel.....	Wabash.....	424	9	59.7	.....	83	29	37	14	34	3.08	.....	0.88	0.0	14	16	4	11	s.	Mrs. H. M. Phillips.
New Burnside.....	Johnson.....	556	15	62.2	- 5.0	83	2 [†]	36	14	38	2.96	- 1.07	1.60	0.0	4	16	3	12	e.	Geo. Harris.
Olney.....	Richland.....	486	23	61.0	- 4.1	83	10	34	14	34	5.18	+ 1.38	1.52	0.0	12	8	11	12	sw.	Victor E. Phillips.
Palestine.....	Crawford.....	500	28	61.2	- 2.3	81	20 [†]	35	14	33	3.37	- 0.29	0.81	0.0	9	12	7	12	sw.	Duane Shaw.
Paris.....	Edgar.....	600	17	58.2	- 4.9	86	29	32	4	36	4.13	+ 0.07	0.93	0.0	9	14	12	5	sw.	H. P. Twyman.
Philo.....	Champaign.....	700	26	56.1	- 5.4	80	22 [†]	31	14	35	5.41	+ 1.32	1.18	0.0	11	12	11	8	nw.	H. A. Burr.
Rantoul.....	do.....	768	19	56.3	- 5.5	81	28	32	4 [†]	35	6.56	+ 1.99	1.70	0.0	13	18	6	7	ne.	Wm. Breiner.
Robinson.....	Crawford.....	500	10	60.0	- 3.5	85	1	36	14	32	3.55	- 0.75	0.75	0.0	10	14	10	7	sw.	A. P. Woodworth.
Sumner.....	Lawrence.....	459	2	60.9	.....	80	20	35	14	31	3.80	.....	1.00	0.0	8	8	11	12	n.	O. A. Fyffe.
Tuscola.....	Douglas.....	644	17	57.1	- 5.2	83	22	30	4	40	5.88	+ 2.08	0.94	0.0	12	17	4	10	w.	E. W. Lester.
Urbana.....	Champaign.....	725	8	57.0	.....	79	28	34	4	31	5.35	.....	1.50	0.0	11	1	28	2	ne.	Prof. J. G. Mosier.

- ^a, ^b, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
^{*} Precipitation included in that of the next measurement.
^{**} Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.
[†] Also on other dates.
[‡] Separate dates of falls not recorded.
[§] Data are from standard instruments not supplied by the U. S. Weather Bureau.
^{||} Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.
[¶] Estimated by observer.
^{|||} Precipitation for the 24 hours ending on the morning when it is measured.
^T Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—Daily precipitation for May, 1910. District No. 3, Ohio Valley.

Stations.	River basins.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
New York.																																		
Allegany	Allegheny	.20	.56	1.05	.02				.01	T.	.08	.09		T.	T.			*	.14		.16		.13	T.	.21	.03	.09	.04		.07	.80	.05	3.73	
Bolivar	do.	.02	.70	.78					T.	T.	T.			T.	T.				.03		T.	.32	.34	.70	.24	.07		.13	.27	.05		3.65		
Franklinville	do.	.18	.69	.99	T.				T.	.04				T.	T.				T.		.42	.02	.05	.09	.32	.12	T.	.12	.24	.25	.04	3.57		
Olean	do.	.08	.72	.44	.42				.04	.08						.01				.02	.04		.18		.38	.01	.54	.10	.08	.04		.52		3.70
Pennsylvania.																																		
Aleppo	Ohio		.27						.13	.23		.74		T.					.58		.22	.57	.34	.22					.16	.22	.50		4.18	
Baldwin	Allegheny		.13	.20					.26	.20	.05			.03					.66		.10	.09	T.	.70	.20	.05			.18	.35	.28		3.48	
Beaver Dam	Ohio		.07	.07	.15				.19	.23	.02			T.				.41		.10	.25	.19	T.	.66	.02	T.		.10	.10			2.56		
Bradford	Allegheny	.21	.47	.76					.02	.02	T.	.05			.06				.14		.08	.12	.10	.51	.25	.16	.05	.02		.16	.30	.02	3.50	
California	Monongahela								.04	.08	.06	T.		T.					.52	.10		.20		.42	T.	.30	.01			.30	.12		3.01	
Clarion	Allegheny	.42	T.	.44					.04	.50		.75		T.					.65	.05	.15	.38	.24	.92	.02			.05			.30	.12	3.01	
Clayville	Ohio		.22						.04	.26	T.	.32	.74						.32		.42	T.		.30	.18	.06			.18	.30			3.16	
Confluence	Youghiogheny	T.	T.	.04					.04	.82	T.	.30	.06	T.	T.				.53	T.	.34	.09	.19	.05	.80	T.			.08	.17			3.55	
Davis Island Dam	Ohio		.22						.04	.29	.54		T.	.05					.40		.19	.13	.05		.12	.30	.03		.08	.02	.37		2.79	
Derry Station	Allegheny		.34	.10	.26				.04	.04	.08	.01		.01					.36		.16		.18	.02	.36	.06	.01		.08	.60	.20		2.83	
Franklin	do.		.02		.13				.04	.81	.31	.02		.02					.71		.26		.26	.04	.15				.10	.22			4.05	
Freeport	do.								.04	.18	.24	.68			.01				.38		.18		.02		.30	.32	.01		.10	.18			2.88	
Greensboro	Monongahela								.03	.08	T.	.62	.05	T.	.07				.42		.09	.22	T.	.13	.34	.10			.08	.01	.37		2.84	
Greensburg	Youghiogheny	1.02	.55						.12	.03				.02					.51		.05	.20	.98	.07	.03	.09			.29	.36	.17		4.49	
Greenville	Ohio		.33	.56	.02				T.	.03		.10		.01					.57		.17	.09		.52	.49	.25	T.		.18	.94	.41		4.69	
Grove City	Allegheny	T.	T.	.18					T.	.34	.01	.37	.13		T.	T.			.46	T.		.18	.02	.09	.02	.70	.03	T.					2.87	
Herr's Island Dam	do.		.30						.14	.10		.50		.15	.02				.55		.10		1.05		.15	.19	.05		.13		.45		3.85	
Indiana	Monongahela		.24						.04	.25	.12	.62		.01					.36		.60	.14	.05	T.	.64	.02	.06		.04	.01	.44		3.04	
Johnstown	Allegheny	.01	.18						T.	.05		.35	.42	.02	T.				.43		.40		.42		T.	.40	.05	T.		.04	.08	.30	3.52	
Lock No. 4	Monongahela			.31					.04	.25	.12	.62		.01					.36		.60	.14	.05	T.	.64	.02	.06		.04	.08	.30	3.52		
Lycippus	Allegheny		.23						.28		.80			.07					.49		.05			.12	.50	.05			.08	.02	.49		3.18	
Parkers Landing	do.		.32	.08	.22				.20	.16	T.			T.					.60	T.		.28	T.	.18	T.	.66	.04	T.		.22	.18		3.14	
Pittsburg	Ohio	T.	.22						.17	.24	.46	.01	T.	.01					.35	.02		.03	.18	T.	.16	.72	.05	.15		.05	.09	.32	3.24	
Sagertown	Allegheny		.56	.93	.01				.08	.10	.03			.03					.35		.15	.01	.25	.04	.10	.13			.14	.13	.33		3.37	
St. Marys	do.	.12	.32	.36					.04	.06	T.			T.					.48		.24	.06	.30	.25	.08	.24			.35	.23	.12		3.25	
Salisbury	do.		.01		.28				.08	T.	.32	.06		T.	T.				.52		.42	.20	.01	T.	.32	.01	.02			.14	.20		2.59	
Skidmore	Ohio		.30	.40										.09					.60		.15	.10	.15	.15	.55	.20				.50		3.10		
Somerset	Youghiogheny		.25						.30		.62			.09					.33		.30			.10	.38	.26			.11	.45	.15		3.34	
Springdale	Allegheny			.17					.42		.33	.04							.55		.20	.06	.07	.01	.59				.19	.21		2.84		
Springtown	Monongahela		.36	.03					.13	.40	T.	.81	.07	T.	T.				.33		.20	.09	T.	.11	.24	.25	.08		.07	.02	.67		3.86	
Warren	Allegheny	.24	.60	.96					.02	.34	.10	.10	.54		T.				.14		.20		.12		.16				.25	.35			3.02	
West Newton	Youghiogheny			.32					.02	.34	.10	.10	.54		T.				.38	.20		.30	T.		T.	.30	.08	.02		.10	.20		3.00	
Maryland.																																		
Deer Park	Youghiogheny								.05	.10	.35	.74	.37						.25		.20	.36	.44		.65	.12	.05			.10	.31		4.09	
Grantsville	do.								.06	.10	.36	.56	.27		.01				.24		.14	.16	.03		.65	.17	.12			.02	.14	.40	3.43	
Oakland	do.								.06	.10	.36	.56	.27		.01				.24		.14	.16	.03		.65	.17	.12			.02	.14	.40	3.43	
West Virginia.																																		
Arbovale	Great Kanawha			.12					1.10	.95	.02		1.42						.50							.08	.05	.48	.03		.24			5.87
Bancroft	do.			.30					.15	.16	.30	.07	.70	.28					.30	.40		.62	.33		.25	.23			.06	.36	.24		4.78	
Beckley	do.			.06					.32	.15	.17		.65						.52		.07		.14		.21	.60				.45			3.50	
Ben's Run	Ohio		.33						.15	.16	.30	.07	.70	.28					.30	.40		.62	.33		.25	.23			.06	.36	.24		4.78	
Bluefield	Great Kanawha		.01	.06					.32	.15	.17		.65						.52		.07		.14		.21	.60				.45			3.50	
Brandonville	Monongahela								T.	.14	.40	.40	.10						.35		.35		.35		.31				.21	.45			3.31	
Buckhannon	do.		.12						.15	.32	.50	.05	.50	.67					.39		.10	.08	.28		.45	.52	.12			.04	.20		4.49	
Cairo	Little Kanawha		.23	.08					.45	.46	.12	.30	.52						.52		.27	.18	.15	.12	.34	.32			.18	.10		4.34		
Central Station	Middle Island Creek		.10						.24	.32	.30	.11	.37	.35					.24	.27	.41	.54	T.	.03	.51	.51	T.		.06	.12	.27		4.75	
Charleston	Great Kanawha								.48	1.06			1.31						.47		.47		.47		.89	.05			.20			4.93		
Creston	Little Kanawha		T.	T.					.49	.51		.04	.90						.45		T.	.83	T.	T.	.70	T.			.07	.04	.05		4.43	
Cuba	Sand Creek		.22						.41	.50	.35	.40	.32						.24	.45		.50	.35	T.	.31	.67	T.		.07	.04	.05		4.43	
Davis	Monongahela	.10		.05					.20	.35		1.00							.20		.15			.40	.25				.20	.30	.30		3.50	
Doane	Big Sandy								.32	.20			.35		T.	T.	T.	T.	.65		T.	T.		.25		.62						3.54		
Elizabeth	Little Kanawha								.32	.20			.35		T.	T.	T.	T.	.65		T.	T.		.25		.62						3.54		
Eikhorn	Big Sandy		.60	.35					.32	.20			.35		T.	T.	T.	T.	.65		T.	T.		.25		.62						3.54		
Elkins	Monongahela		.26	.01					.24	.30	.18	.06	.63	.15	T.			.20	.07		.18	.												

TABLE 2.—Daily precipitation for May, 1910. District No. 5—Continued.

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Ohio—Cont'd.																																	
Bladensburg.....	Muskingum.....	.10		1.08				.08	T.	.20		.55						.45	.10		.30	.25	.33	T.	T.	.20	.05		.05		.30	4.04	
Cadiz.....	Ohio.....	T.		.19				.02	.26	.20	.56							.33	.44		.23	.12	.03	T.	.37	.31	.04		.25	.05	.46	3.86	
Cambridge.....	Muskingum.....			.21				.17	.50	.14	.75								.45	.89		.61	T.	.24	.02	.10	.22		.08		.25	3.65	
Camp Dennison.....	Ohio.....			.90				.45	T.		.55	.02						.32			.61	T.	.24	.02	.10	.22		.54		.06	4.03		
Canal Dover.....	Muskingum.....	.34		.40				T.	T.		.53							.24	.24		.06	1.42	T.	.30	.13		.24	T.	.31	4.21			
Canton.....	do.....	* .54	.38	.12				* T.		.15	.02				T.			* .48			T.	.09	* .01	.01	.21	.06	.01	*	.19	.06	2.33		
Cardington.....	Scioto.....	.25	T.	.15				.04	.08	.12	.50							.30	.16		.48	.30	.11	.02	.03	.23	T.	.35	T.	.18	4.30		
Cincinnati.....	Ohio.....		.78					.48			.35							.26		.11	.61	.16	.02	.02	.06	.17		.28			3.30		
Circleville.....	Scioto.....	T.		.43	.03			.22	.08		.60	.29						.64			.14	.47	T.	.22	T.	.29	.04		.11			3.56	
Clarington.....	Ohio.....		.27					T.	.11	.32	.70	.13			T.			T.	.65		.55	.13		.60	.16	.27	.05	.03	.10	.45	.30	4.82	
Columbus.....	Scioto.....	.25		.72				.28	.06	.02	T.	.71						.82			.47	.02	.19	T.	.04	.23		.25	T.	.04	4.10		
Coshocton.....	Muskingum.....		.16					.23			.20	.12	.34	.20				1.06			.13			.20	.26	.30	.16		.03	.08	3.47		
Dayton.....	Great Miami.....	* .12	.06					.46	T.	T.	.55	.27						.54			.25	.75	.09	.03	.02	.38		.07			4.59		
Delaware.....	Scioto.....	.31	T.	.94				.17	.08	.16	.52							.48	.01		.69	.27	.16	T.	.06	.25	.02		.06		.09	4.27	
Dennison.....	Ohio.....		.23					.08	.07	.16	.02	.73	.03		T.			.53	.21		.17	.24	T.	.04	.52	.11	.02	.03	.07	.13	.47	3.86	
Frankfort.....	Muskingum.....		.07	.28	.02			.06	.14		.64	T.			T.			.16	.42		.15	.10		.14	.82	.56		.03	.01	.11	.42	4.13	
Garrettsville.....	Scioto.....		.42					.25			.98	.12						.35		.90					.30	.20					15	3.67	
Granville.....	Mahoning.....		.53	.31				.08							T.	.04		.12	.37		.16	T.	.44	.03	.09	.15			.16	.42	.20	4.10	
Gratiot.....	Muskingum.....		.25	.68	.03			.21	.44	.10	.44	.31			T.			.82			.17	.73	T.	.13	.05	.29	T.		.19	T.	4.84		
Green.....	do.....	T.		.30				.09	.15	.17	.82				T.			.41			.34	.18	.01	T.	.44	.21			.22		.12	3.46	
Green Hill.....	Ohio.....		.56					.75			1.25							.48			.30				.37	.25			.10			4.26	
Greenville.....	Muskingum.....	.20	.02	.31				.01	.05		.21	T.			T.			.41	.18		.13	.05	.15	.03	.25	.06	.02		.09	.05	.24	2.46	
Hillsboro.....	Great Miami.....		.12					.45			.43	.20						.18			.07	.34	.04		.13	.01	.03		.08			3.24	
Ironton.....	Scioto.....		.14					.78	.06	T.	.68							.98			.21			T.	.08	1.02			.27		.10	4.32	
Jacksonburg.....	Ohio.....		.12					.74	1.20		.35	.16						.27	.12		.33				.58	.19			.05		.02	5.13	
Kenton.....	Great Miami.....	.03						.80		T.	.68							.50		.80	.12		.06						.20		.06	3.39	
Killbuck.....	Scioto.....	.65	.03	.65				.12		.02	.40	.01						.11	.10		.77	.13	.03	.05	.06				.20		.06	3.39	
Lancaster.....	Muskingum.....		.55	.60				.06	.08	.38	.61							.31	.30		.46	.53	.24		.11	.27	.11		.52	T.		5.22	
Lawshe.....	Ohio.....	T.		.32				.16	.60	.22	.10	.80						.25	.07		.21	.30	.12	T.	.18	.16			.15		.06	3.70	
McConnellsville.....	do.....		.34					.34	.22		.04	.51	.15					.51	.04		.32		.04		.14	.10			.09	.54	.03	3.41	
Marietta.....	Muskingum.....		.22					.52	.26	.08	T.	.95						.51	.08		.26	1.69	.06		.25	.38	.12		.16		.12	5.66	
Marietta.....	Ohio.....		.36					.16	.48	.33	.10	.54	.14					.30	.26		.70	.09		.18	.30	.07			.10	.13	.15	4.39	
Marion.....	Scioto.....	.40		.12				.03		.20	.72							.25			.65	.30	.06	T.	.18				.28	T.	.35	4.54	
Millfordon.....	Muskingum.....	.41	.03	.84				.07	.11		.58							.27	.12		.28	.28	.15	T.	.03	.23			.19	T.	.12	3.69	
Milligan.....	do.....		.22					.11	.20	.02	.82	.06						.32	.23		.28	.95	.32	T.	.12	.15	.04		.06	.15	.26	3.84	
Millport.....	Ohio.....		.20	.30						.12	.24				T.			.05	.50		.21	.08	1.00	.14	.48	.05	T.		.25	.15	.14	3.90	
Nellis.....	Muskingum.....	.20	.20	.40					.76		.45							.10	.36		.40			.35	.15				T.	T.	1.30	4.80	
New Alexandria.....	Ohio.....		.10					T.						1.10				.25	.27		.15		.14	.02	.07	.25	.02		.13	.07	.26	3.68	
New Berlin.....	Muskingum.....	1.00	.06	.74					.25		.22				.03			.65			*	*	*	1.28					*	*	.50	3.26	
New Waterford.....	Ohio.....		.60					.19	.25		.70							.10	.19		.47	T.	.14		.05	.23	T.		.26		.06	3.51	
Ohio State University.....	Scioto.....	.24		.74				.19	.39		.70							.70	.19		.27	.12	.24		.10	.18	T.		.23	T.	.08	4.11	
Pataakala.....	Muskingum.....	.16		.48				.14	.29	.16	.71							.27	.17		.33	.42	.02		.23	.34			.18		.26	4.80	
Philol.....	do.....		.38					.10	.02	.17	.11	.80						.55	.10		.73	.20		.05	.15	.10	.05		.20		.08	5.47	
Plattsburg.....	Great Miami.....	.80	.10	.83				.25	.33	.08	.85	.05						.26	.16		.34	.01			.49	.31	.01		.07	.04	.08	3.40	
Pomeroy.....	Ohio.....		.37					.37	.30		.27	.32						T.	.67	*	.27		*		.09	.45			*	.32	*	4.35	
Portsmouth.....	do.....		.46					.80	.47		.82							.58	.05		.42	.38	.63		.13	.29			.18	.15	.20	4.23	
Rittman.....	Muskingum.....	.50		.60					T.		.12							.24			.30		.14	.04	.02	.18			.17		.24	3.49	
Shenandoah.....	do.....	.60	.25	.00				.25	.07	.01	.60	.01						.13	.17		.66	.80	.06	.07	.04	T.	.01		.10		.04	4.61	
Sidney.....	Great Miami.....	.33		.12				.25	.07	.01	.60	.01						.57			.17	.54	.06	T.	.03	.85	.11	T.	*	.16	.02	5.12	
Somerset.....	Muskingum.....		.19	.14				.31	T.	.08	.80	T.						.43	.03		.50	.65	.01	.01	.14	.17	.02		.11		.05	4.46	
Springfield.....	Great Miami.....	.16		.99				.39	.20	.29	T.	.75	.04		T.			.37	.33		.20	.39	T.	T.	.45	.03	.01		.27	.05	.37	4.14	
Summerfield.....	Ohio.....		.50					.36	.19	.43	.62	.34			T.			.45	.18		.34			T.	.56	.32			T.			3.96	
Thurman.....	do.....		.50					.38		.																							

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2.—Daily precipitation for May 1910. District No. 3—Continued.

Stations.	River basins.	Day of month.																															Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Tennessee—Cont'd.																																			
Birds Bridge	Tennessee			.21				.26	1.10	.15			.29	.09				.29	.15	.08	.04	.05	.03	.07	.39	.22					.22		3.64		
Bluff City	do							T.	.98	.06			.32	.58					.28		.30	.20	.30	.20	.10	.70					.30		3.42		
Byrdstown	Cumberland		.20										.30				.20	.60			.30	.20	.30	.20	.10	.80					.30		3.30		
Carthage	do		.03					.01					.52				.15	.10	.75			.08	.05	.15	.26							.09		4.63	
Cedar Hill	do			T.				T.	.20	.30			.25				.15	.25	.15		T.	1.00	1.60	T.	1.60	T.					.25	T.		5.75	
Celina	Cumberland		.25					.60	.18				.69				.12	.37	.88			.66	.06	.37	.08	.29	.20							3.06	
Center Point	Tennessee						T.	.20					T.				.10	.15			1.63	T.	.20	.35	T.	.40	.63							7.83	
Charleston	do		.30					.33	1.50	.40			.20	.40			.05	.60	.30			.15	.65	.25	1.07	.70					.20		8.08		
Chattanooga	do		.17					.01	.33	.19			.56				.73	.29	.39	1.39	.41	.87	.47	1.10	.01					.05	.11		3.88		
Clarksville	Cumberland		.03					.48					.23				.09	.24			1.41	.01	.30	.13	1.13	.14	.01				T.	.03		6.63	
Clinton	Tennessee		.03					.20	.85	.45			.35	.05			.45	.45			.15	.55	.40	.25	1.10	.40						.95		6.30	
Dandridge	do							.14	.20	1.46			.30				.40	.34				.15	.20	.60	.60	.70					1.30		7.37		
Decatur	do		T.	.13				T.	.63	.60			.80				.50	.35	.71		.09	.56	.05	.53	.51	1.62	.02				.27		5.96		
Dickson	Cumberland							.49									1.71				.53	.10	.72	.43	.92	.02							6.31		
Dover	do		T.					T.	.32	T.			.38				.18				1.51	.10	T.	.28	1.06						T.			3.67	
Dunlap	Tennessee		.76	.03				.25					1.41								1.86	.26	.12	1.41	.24	.11					.10			6.31	
Elizabethton	do		.07					T.	.76	.14			.33	.50					.05	.04		.05	.25	.25	.01	.28	.08							3.10	
Erasmus	Cumberland		.06					.32	.16				.41						.78	.33	.08	T.	.23	1.43	.27					.09	.70			5.87	
Florence	do		T.					T.	.90				.53						.05	.17	.43	.60	.45	.58	.37	.19	.43	.08			T.	.68		5.46	
Franklin	do		.04					T.	.84				.45						.83	T.	.88	1.60	.24	.34	.44	.24	.20				T.	T.		6.10	
Halls Hill	do			T.					.20	.24			.55				T.	.05	1.22		.52	.09	.36	.78	.22						.50	T.		4.98	
Harriman	Tennessee						*		1.32	.24			.30					1.14		*		*	.19				1.08				.31			5.58	
Hohenwald	do							.50									1.00			1.30	.40	.45	.35	.44	.91	.37							7.14		
Iron City	do						T.	.35					.18			T.		.33	.39	60	1.07	1.32	.65	.29	.30	.05					.08			5.01	
Jefferson City	do							.24	.74			.34					.18	.14	.20		.19		.68	.80	.14						.23			4.45	
Johnsonville	do		.40				.04	.24					.58			T.	.10	.26			.03	.75	.22	.10	.44	.48					T.	.40	T.	4.04	
Jonesboro	do							.46	.70	.70			.71			T.	.60	.50	.30		.10			.80	.50						.05			5.42	
Kingston	do			.05				.17	.82	.32			.28	.05			.02	.39	.86		.01	.29	.18	.20	.66	.40	.10				.03			4.97	
Knoxville	do		.30					T.	1.51	.30	T.		.17				.38	.36	.09	.01	.50	.23	.22	1.21	.37	.25				1.06	T.	21		7.28	
Lebanon	Cumberland		.10					.68	T.				.43			T.	.16	.28	.94	.63	.70	.22	.71	.13	.70	.70					.22	T.		6.55	
Lewisburg	Tennessee		T.					.68	.03				.43			T.	.09	.60	.30	1.1	.56	.77	10	1.49	.06						.10	T.		6.32	
Loudon	do		.10					.30	.80	1.66			.35	.10				.94		.26	.25	.55	.32	1.01	.39	.25					.16			7.44	
Lynnville	do		T.	.10				.35					.24			T.	.04	.67	1.68		.50	.07	.07	1.42	.08									5.46	
McGhee	do							.12	.95	.20			.42	.18		T.	.50	.77		.25	.24	.55	.05	.80	.40	.20					.70	T.		6.33	
McMinnville	Cumberland		.22	T.			.01	.37	.03				.44				.06	.18	1.05	.17	.60	.28	.08	.21	.82	.10					T.	.36	T.	4.98	
Maryville	Tennessee			.05				.78	.78	.01			.27	.01			.35	.23	.66		.27	11	.51	.95	.92							.78		6.68	
Mountain City	do		.23					.73	.71	.18			.70				.48	.46			.14	.24	.58	.29	.17								4.51		
Nashville	Cumberland		.10				.11	.35				T.	.15				12	1.43		.67	.60	.44	.07	.27	1.02	.22					.26	T.		5.81	
Newport	Tennessee							.45	.50			.30					.25	T.				1.00		1.00	.40						.85		5.05		
New River	Cumberland							.45	.46	.34			.60	.15			.47	.68		.20	.19	.15	1.05	1.10							.27		6.11		
Palmetto	Tennessee												.35						.58	.45	.37		.52	1.12	.05						.16		3.60		
Pinewood	do		T.	.37				T.	.24			T.	.13					12	.64		72	1.03	.32	.31	.41	.63	.12							4.94	
Pope	do							.04	1.00	.28			.58			*	.10	.90			* 2.20	.90	*	.40	.16							T.	*	4.60	
Rogersville	do												.58				.24	.52			.10		.17		.38	1.26						* 46		5.03	
Rugby	Cumberland							1.82	.20	.10			.75				.43			.08	.24	.35		1.22	1.18	.15					.70	.52		7.64	
Savannah	Tennessee												.50				.35	.12	.50		.14		.34		.94	.17							4.58		
Sevierville	do		.01					.63		.27									*	*	* 2.73	.86		1.07	.63								6.00		
Sewanee	Cumberland		.05	.08				T.	.85	.04			.80				.18	.20	.68		.83	.02	.20	.30	.66	.44						T.	.83	T.	6.08
Sparta	Tennessee																																	4.74	
Springdale	do		.32					.04	.48				.25			T.	.12	.10		T.	1.33	.27	.06	.42	1.11	.02					.22			T.	6.29
Springville	do							.07	1.00	.95			.55	.15			.17	.61			.06	.38	.40	.23	.91	.30	.06					.47		4.93	
Taswell	do												.43				.54	.55	.26	.77	.33	.23	.20	.80	.20						.02			6.80	
Tullahoma	Cumberland		T.					T.	.58	.28							.15	1.10		1.10	.30	.05	.15	1.12	.58	.02						1.01	.01	4.99	
Walling	Tennessee		T.	.20				.05	.30				.09			T.	.60	.46	1.58	1.40	.46	.15	.62	.23	.06	T.						.13	.03	6.16	
Waynesboro	do															T.	.23	.18		.27	.40	.00		.43	.38	.07								3.96	
Wildersville	Cumberland		.09					.48					.39				19	1.01			1.32	.79	.10	1.97							.05			6.39	
Worsham	Tennessee							T.	.85								T.		.73	.08	.65	.93	.25	.10	.80	.02						.30		4.71	
Kentucky.																																			
Alpha	Cumberland		.45				.85	.12	T.			.80	.20				.20	1.00		.65	.30	.72	.53	.29	1.50	T.	T.					T.		7.61	
Anchorage	Ohio		.60					1.00				1.32	.08				.45			T.	.51	.15	.03	.37	.15						.26			4.92	
Bardestown	Salt		T.	.07				.32	.63	T.			.80				T.	T.	.69		.56	.33	.05	.10	.12	.15								3.82	
Bentleyville	Kentucky			.14				.28	.96	.46			1.22					.18	.55		.32		.14	.08	.56	1.90								6.80	
Beaverdam	Green		.10	T.				.50	.59	T.			.40				T.	T.	.20	.30	T.	.10	T.	.09	.26	T.						.17		2.71	
Berea	Kentucky		.12					.84	.38				1.02				.06	.61		.78		.50	*	.84	.62										

TABLE 2.—Daily precipitation for May, 1910. District No. 3—Continued.

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Indiana—Cont'd.																																	
Bluffton	Wabash	.20	.24	.50				.15	.01			.36						.14	.13		.41	.55	.03	.24	.02					.17	T.	.13	3.28
Butler	East Fork, White	.03		1.02				1.32	.19			.66					T.	.61			1.02	.12	.23	.28						.24			5.72
Cambridge City	Whitewater		.82	1.34	.01				.81	.01		.56	.18					T.	.32		.05	1.22	.34	.02	.18	.01				.28			6.15
Columbus	East Fork, White		T.	.85	.01				.10	.36		.07	.36					.02	.01	.32		.63	.10	.31	.05	.04	.03			.14	.05		3.45
Connersville	Whitewater	.23		1.06				.71		T.		.65						T.	.29			.82	.19	.09	.03	.04	T.			.12		T.	4.25
Delphi	Wabash		.64	.62				.15				.40	.10					T.	.30	.28		.45	.02	.01	.47	.16		T.		.60			3.90
Eminence	West Fork, White	T.	T.	1.25				.33	.15			1.05						T.	.30			T.	T.	.16	T.					.20			3.44
Evansville	Ohio		.63	.12			.07	.63	.05			.29					T.	T.	.03		.01	.08	.02	.19	.13	.36				.02			2.63
Farmersburg	Wabash																																2.73
Farmland	West Fork, White		.22	.85	T.				.22			.44	.13						.24		T.	.16	.12	T.	.04					.06	.25		4.32
Greenfield	East Fork, White	T.		1.50				.29		T.		.46	.05					T.	.28			.12	.18	.23	.21							T.	3.97
Greensburg	do.			.77				.85		T.	.03								.76			.59	.41	.23	T.	.14	T.			.19			
Heltonville	do.																																2.74
Huntingburg	Wabash			.67				.77		.05		.29	.26						.79			.60	.15	.02	.25	T.				.20			2.52
Huntington	do.	.05	.38	.18				.10	T.			.37							.13			.08	1.30	.03	.03			.03		.14			3.86
Indianapolis	West Fork, White	.04	.40	.30				.24		T.	.27	.66							.26			.29	.22	.36	.03	.02	T.			.19			4.25
Jeffersonville	Ohio			.55				1.43				.85	.05					.01	.34		.01	.43	T.	.12	.02	.20	.05			.67			5.22
Judyville	Wabash	.20	.38	.70				.38	.09	T.		.33							.24			.57	.30	.07	1.25	.01	.03			.39		T.	2.31
Kokomo	do.	T.	.20	.20				T.				.50	.10					T.	.20	.30		.20	.36	T.	.26	T.			.50			4.24	
Lafayette	do.		.32	.62				.35	T.			.26	.10					T.	T.	.30		.51	.39	.09	.46	.29				.55			2.90
Logansport	do.		.37	.53				.05				.33	.07						.14			.60		.18	.28	.04				.31			4.27
Madison	Ohio			1.00				.97	.14		.03	.35	.14					.01	.35			.70	T.	.07	.05	.20	.05			.21			2.80
Marengo	do.																																2.58
Marion	Wabash		.11	.64				.16				.39	.09						.23			.25	.31		T.	.11				.29			2.40
Markle	do.	.40	.50	.10				T.	T.			.40							.20			T.		.30		T.	T.			.20	T.	.30	4.03
Mauzy	East Fork, White	.28		.96				.87	.37	T.		.66						T.	.23			.29	.22	.36	.03	.02	T.			.18			4.87
Moore Hill	Ohio	.08		.82				.52	.13	.08		.26	.22						.36			.13	.04	.03	.03	.13	.02			.18			2.63
Mount Vernon	do.			.82				.52	.13	.08		.26	.22						.12			.08		.02	.34	.04	.24			T.			4.63
Paoli	East Fork, White			1.35				1.14				.52							.55			.36		.11	.13	.28				.23			3.15
Princeton	Wabash		.90					.78				.52							.50			.45	.57	.06	.08	.05				.09		.10	4.79
Richmond	Whitewater	.32	.52	1.05				.56		T.		.71							.19			.47	.63	.06	.65					.09		T.	2.98
Rochester	Wabash	.25	.35					.04	.03			.27							.32			.21	T.		.48					.56			3.99
Rockville	do.	T.	.62	.49				.57	.02			.68	T.						.75		.02	.33	T.	.12	.16	.77	.01	.01		.02			4.02
Rome	Ohio		.18					1.25		.03	T.	.05	.32						.32			.05	.06	.08	.03	.04				.02		.32	3.61
Salamonia	Wabash	.34	T.	.68				.27	.01			.46							.27			.05	1.06	.08	.03	.04				.21			5.41
Salem	do.		1.03					1.35	T.			.66	.08						.52			.08	T.	.33	.15	.28	T.			.21			5.49
Scottsburg	East Fork, White			1.02				1.45				.48	.16						.97			.85		.16	.06	.04			.30				3.94
Seymour	do.	.13	.88					.78		T.	T.	.58	.09						.37			.50		.15	.14	.09				.23			
Shelbyville	do.																																4.14
Terre Haute	Wabash	.04	.18	1.12				.60				.66	.02						.28			.06			.80					.38			5.65
Veederburg	do.	.10	.83	.34				.52	.15			.72							.29			.46	.30	.31	.53	.01	.09			1.00			2.55
Vevay	Ohio			.75				.50				*	.40						.20				.40	.05	T.	.15				.10			3.76
Vincennes	Wabash		.20	.85				.50	.10	T.		.08	.75					.05	.03	.20		.15	T.	T.	.25	T.				.60			4.06
Washington	West Fork, White		.90	.76	.03			.47	.32	.05		.09	.55					.02	T.	.11		.08	.01	.05	.07	.12	T.			.31	.12		3.43
Whitestown	do.	.47	.10	.67				.08	.06	.05		.40	.02						.34			.21	1.43	.06	.21					.33			3.86
Winona Lake	Wabash	.17	.46	.01				.02	.03			.53							.30			1.16	.08	.03	.43					.54		.10	3.04
Worthington	West Fork, White	.02		.39				.63	T.			.80	.15						.04	.21		.10			.27					.37			2.69
Illinois.																																	
Albion	Wabash	.07		.50			.10	.21	.02			.59							.10			.17			.03								3.84
Charleston	do.	.05	.70	.11				.30	.60	.07		.76							.16			.13	.16	.04	.05	.17				.54			2.70
Equality	do.		.22				.05	.51	T.		T.	.09	.50					T.	T.	T.	.05	.14	.02	T.	1.01	.11		T.	T.		T.		3.77
Fairfield	Ohio		.73				.08	.52				.49	.13						.42			.12			1.24					.04			3.17
Flora	Wabash	T.		.17				.53	T.			.92							.10	.10			T.		1.05					.30			3.58
Golconda	Ohio		.27			.13	.58	T.			.04	.42	.36						T.	.14		.17	.39	.65	T.	.76	.27				T.	5.38	
Hoopeston	Wabash	.18	.64	.11				.49	.14	.03		.36							.15			1.02		.10	.09	1.70		.01		.42			2.96
McLeansboro	do.		.88					.54				.07	.20							.07		.12			1.65	.03							4.63
Martinsville	do.	.15	.85					.85	.08			.85							.15			.05		1.00	T.					.65			3.08
Mt. Carmel	do.		.16	.88				.38		.06		.16	.40						.06	.02	.14		.24	.02	T.	.48		.04			T.	.04	2.96
New Burnside	Ohio			T.			.55					.65										.16			1.60	T.							5.18
Olney	Wabash	.04		.20				.61	.03			1.05							.05	1.52		.											

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 3, Ohio Valley.

Date.	Pennsylvania.				West Virginia.																Ohio.							
	Greenville.		Pittsburg.		Charleston.		Elkhorn.		Elkins.		Glenville.		Huntington.H		Morgantown.		Parkersburg.		Wheeling.H		Canton.		Cincinnati.		Columbus.		Dayton.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	82	46	82	53	87	55	84	48	84	50	87	49	88	52	82	51	85	55	86	49	80	46	82	61	80	52	82	53
2...	81	50	83	62	88	58	84	52	85	48	89	50	89	54	84	58	86	58	88	52	80	53	84	62	82	58	83	54
3...	71	43	68	46	86	56	84	51	77	45	88	49	74	57	75	47	70	50	64	56	50	46	72	46	62	44	54	47
4...	57	37	57	42	64	47	68	45	52	39	61	46	60	48	57	42	59	46	66	43	55	38	59	40	56	39	60	35
5...	58	30	54	36	62	37	60	34	56	28	64	31	64	38	56	32	58	39	67	32	53	33	59	38	55	33	60	31
6...	60	26	60	36	65	35	65	32	59	25	68	28	66	33	58	30	61	35	71	29	59	29	62	43	61	38	63	33
7...	70	30	68	40	65	43	68	39	65	30	71	33	64	41	70	38	65	45	72	32	66	34	58	47	60	45	58	45
8...	74	48	73	55	75	54	65	45	76	51	76	50	75	50	74	45	73	55	76	37	70	50	67	50	70	51	69	49
9...	65	50	62	52	71	52	65	48	57	48	70	53	68	51	62	52	62	52	65	53	64	49	73	50	69	47	71	47
10...	70	35	68	48	78	54	75	44	71	46	78	48	81	52	71	48	75	49	75	43	66	39	77	55	72	49	75	42
11...	60	42	60	48	78	56	70	48	64	52	77	53	72	55	80	51	61	48	57	45	53	47	61	50	62	47	56	53
12...	55	29	55	43	66	48	72	38	60	44	66	47	67	49	58	43	61	44	69	41	55	35	61	45	56	41	60	38
13...	55	29	55	40	64	40	70	35	53	32	61	35	61	39	57	36	57	40	64	37	51	36	59	43	53	38	57	34
14...	50	37	48	38	58	41	53	35	45	38	55	40	55	39	55	37	51	41	52	40	48	37	56	40	51	39	55	40
15...	63	31	60	38	66	37	70	29	63	35	68	34	68	35	59	34	63	39	70	31	60	31	65	41	62	38	65	32
16...	71	33	72	45	69	45	65	31	70	36	73	34	67	44	70	45	68	43	71	34	69	36	65	53	69	48	70	48
17...	74	41	73	54	69	50	62	50	69	39	76	40	66	50	75	50	69	50	76	43	70	48	61	55	65	53	62	52
18...	67	50	66	53	72	46	70	50	65	47	72	55	74	49	68	54	69	52	74	49	67	50	72	52	69	52	71	49
19...	79	35	77	52	79	47	76	40	78	39	83	41	83	44	78	48	77	47	84	44	78	42	75	49	76	51	76	46
20...	69	48	69	62	79	57	75	60	69	52	73	51	74	51	71	59	68	59	69	51	66	54	77	59	72	57	75	58
21...	80	57	79	62	80	60	76	62	77	58	81	57	85	61	78	60	79	61	83	56	81	58	81	63	81	61	81	61
22...	82	54	82	64	84	60	82	54	80	52	88	57	86	60	82	58	83	60	85	60	78	59	76	63	78	64	76	62
23...	80	60	81	66	85	63	80	56	86	57	86	59	83	63	83	67	78	63	82	61	75	60	72	63	72	63	68	64
24...	69	59	72	62	82	66	75	57	79	52	82	57	71	60	76	63	69	61	72	60	65	59	65	60	64	57	63	60
25...	63	49	63	52	69	53	74	41	70	46	68	55	69	52	63	53	65	51	69	56	64	50	69	53	67	50	70	50
26...	63	42	60	51	68	50	72	40	62	41	69	46	70	50	64	50	65	51	70	51	69	47	67	51	63	48	67	44
27...	65	39	61	46	68	45	67	40	62	39	69	42	73	42	63	41	66	50	70	43	64	40	70	47	66	45	70	41
28...	76	34	73	45	74	44	75	38	72	37	81	42	73	42	70	40	76	42	81	39	76	37	78	48	75	48	76	41
29...	76	55	73	54	79	49	76	44	77	38	81	43	81	45	77	39	76	47	78	41	70	48	77	56	72	52	76	54
30...	58	43	60	45	79	54	80	46	64	48	76	48	74	53	67	51	66	52	68	51	54	47	70	50	58	44	64	49
31...	47	39	45	39	62	47	70	41	48	38	65	46	60	49	51	40	52	44	45	42	42	37	58	48	47	41	52	44
Mns	67.3	42.0	66.4	49.3	73.3	50.0	72.2	44.3	67.6	42.9	74.3	45.8	72.3	48.6	68.5	47.2	68.2	49.3	71.6	45.2	64.2	44.4	68.6	51.0	66.0	48.2	67.3	47.0

Date.	Ohio.				Virginia.				N. C.		Ala.H		Tennessee.												Ky.H			
	Marion.		Waverly.		Big Stone Gap.		Wytbeville.		Asheville.		Decatur.		Chattanooga.		Jonesboro.		Knoxville.		Nashville.		Palmetto.		Sparta.		Waynesboro.		Beattyville.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	78	48	86	47	83	47	81	53	85	50	83	57	84	63	85	46	84	58	81	66	81	61	.....	46	81	59	88	48
2...	81	56	87	48	82	40	82	53	84	49	87	55	85	57	83	48	84	56	84	68	85	59	.....	48	83	63	89	47
3...	75	44	64	54	80	40	76	53	82	51	89	55	79	59	84	45	80	55	72	53	79	51	.....	50	76	54	74	48
4...	59	33	63	40	71	49	59	44	61	48	70	54	55	53	62	36	62	50	65	55	69	41	.....	50	64	51	58	46
5...	62	27	64	29	63	36	60	35	63	40	79	49	65	50	67	34	66	44	69	48	68	47	.....	38	70	45	71	33
6...	67	28	68	36	68	38	66	31	66	36	66	54	60	53	69	32	65	47	66	50	72	50	.....	49	67	52	71	32
7...	66	35	67	35	64	48	54	45	56	50	80	54	75	53	64	49	65	51	75	52	68	48	.....	54	77	58	63	43
8...	72	51	75	45	69	53	67	52	61	53	68	55	72	54	68	41	73	54	61	52	65	50	66	55	68	52	70	45
9...	69	48	72	44	66	47	58	48	60	47	78	45	75	50	67	42	70	49	76	54	77	46	73	52	75	42	73	49
10...	71	42	80	43	75	45	72	50	77	41	85	45	81	53	72	42	79	51	83	54	85	50	80	50	84	48	83	44
11...	67	45	61	49	80	49	75	56	82	48	89	55	86	61	81	47	83	60	86	63	86	55	85	45	85	52	81	48
12...	61	35	64	39	76	62	67	42	70	47	71	56	72	57	73	46	71	53	70	52	76	55	75	55	75	55	67	49
13...	53	33	61	30	58	38	55	35	56	40	69	46	65	49	60	37	62	46	65	46	66	44	62	43	65	39	61	38
14...	53	35	53	37	56	35	48	35	59	34	71	40	66	44	61	33	63	40	65	45	68	37	63	36	67	35	61	34
15...	69	30	67	26	68	33	65	28	67	34	76	40	68	47	68	32	67	42	71	42	71	36	72	37	70	58	71	32
16...	72	38	68	38	67	45	60	42	55	47	68	43	63	52	60	46	56	5										

TABLE 3.—Maximum and minimum temperature at selected stations, May, 1910. District No. 3—Continued.

Date.	Kentucky.														Indiana.														Philo. Ill.	
	Bowling Green. H		Erlington.H		Greensburg.H		Lexington.		Louisville.		Maysville.H		Williamsburg. H		Buttleville.		Evansville.		Indianapolis.		Kokomo.		Rockville.		Worthington.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1...	88	57	84	65	84	57	80	58	83	64	86	52	87	53	81	59	77	62	74	58	80	53	75	59	79	60	73	46		
2...	88	58	86	64	85	54	82	61	86	65	88	54	88	50	83	58	80	65	78	52	80	53	74	48	81	60	73	43		
3...	65	62	55	51	73	56	67	45	70	51	67	55	78	55	73	48	65	50	56	44	58	42	49	43	74	47	56	40		
4...	69	48	63	50	62	42	56	39	60	43	62	44	63	48	60	35	60	45	57	38	59	33	58	34	62	36	59	33		
5...	73	41	69	38	74	37	58	38	61	43	60	34	67	39	62	36	62	43	58	38	62	32	55	37	65	37	61	34		
6...	69	46	64	45	76	39	62	40	63	45	68	32	70	36	64	37	62	50	61	43	65	35	56	43	66	44	63	40		
7...	77	48	64	49	72	42	62	46	66	48	62	35	70	47	57	45	71	50	55	45	62	35	56	43	60	47	55	44		
8...	63	46	58	49	65	46	62	50	64	52	72	45	70	50	61	48	55	49	55	48	63	49	54	47	58	48	51	46		
9...	80	50	78	49	75	47	70	47	76	50	74	59	73	51	73	47	75	49	74	47	79	47	67	47	71	46	73	39		
10...	84	54	83	51	83	45	77	57	82	61	83	50	83	48	79	50	78	59	74	53	75	46	70	51	81	50	76	46		
11...	87	57	85	59	82	53	69	52	69	55	66	53	85	61	64	54	74	54	59	44	71	49	66	49	72	55	62	46		
12...	72	53	68	42	68	49	61	47	64	47	65	45	67	54	62	40	65	46	60	39	61	32	50	36	64	37	61	35		
13...	67	44	66	39	64	38	57	41	62	45	61	35	60	39	60	33	63	45	54	40	60	34	50	38	62	36	55	35		
14...	70	37	69	36	65	33	55	36	61	43	59	32	63	36	61	31	62	42	58	36	63	31	60	34	63	34	62	31		
15...	71	37	70	37	70	33	63	39	68	44	70	31	71	34	66	37	66	44	63	40	66	37	57	41	65	41	63	40		
16...	63	53	68	52	59	40	58	53	64	55	67	45	58	37	64	53	66	58	64	53	71	49	60	53	65	53	70	52		
17...	65	52	71	56	60	50	59	52	63	54	64	46	65	52	61	50	67	56	63	52	64	49	60	53	63	55	65	53		
18...	80	46	80	43	68	41	69	48	74	52	75	48	74	50	72	47	74	51	72	50	77	51	64	46	74	44	75	43		
19...	81	45	79	44	79	40	76	52	75	52	80	44	79	42	73	45	73	52	72	52	80	45	67	50	74	45	76	43		
20...	81	60	79	52	78	50	74	61	79	63	78	43	80	54	77	59	76	64	76	59	.....	.....	72	60	79	62	78	57
21...	84	60	75	61	79	55	77	61	81	65	81	48	85	60	78	62	74	65	76	57	.....	.....	72	63	79	64	77	61
22...	85	60	85	62	79	59	76	63	79	64	82	61	83	61	77	61	79	64	78	62	83	74	78	68	79	62	80	58		
23...	82	62	80	62	78	60	75	63	76	64	76	61	86	60	72	61	75	62	68	59	72	66	74	60	76	64	70	56		
24...	77	60	72	62	76	57	70	60	70	60	75	60	80	62	71	58	69	60	72	56	70	55	61	54	73	57	68	53		
25...	76	53	72	50	79	50	67	51	72	55	71	49	69	53	72	50	71	54	67	50	68	43	62	46	72	65	65	43		
26...	76	51	76	52	73	45	67	48	72	50	70	44	73	46	71	42	72	56	66	47	70	38	59	44	74	.....	68	41	
27...	80	49	76	51	73	42	67	46	71	47	73	40	74	45	72	38	70	50	70	43	70	36	60	39	73	40	70	35		
28...	85	45	85	47	79	40	74	51	80	51	82	40	81	42	78	42	80	53	76	51	78	46	68	46	80	44	80	46		
29...	88	50	85	53	86	45	78	54	83	58	82	44	84	43	78	56	83	64	77	54	75	52	69	61	78	60	75	61		
30...	80	53	79	51	75	49	71	52	76	59	74	53	76	55	73	53	76	59	66	48	66	44	65	50	74	54	68	47		
31...	76	48	75	45	70	43	66	47	71	51	63	45	70	46	70	45	72	53	60	45	55	40	64	44	70	45	66	39		
Mns	76.8	51.1	74.2	50.5	73.8	46.4	67.9	50.3	71.6	53.4	72.1	46.0	74.6	48.7	69.8	47.7	70.7	54.0	66.4	48.5	69.1 ^b	44.7 ^b	63.0	48.0	71.2	49.7 ^a	67.5	44.7		

Climatological Data for May, 1910.
DISTRICT No. 4, LAKE REGION.

Prof. HENRY J. COX District Editor.

GENERAL SUMMARY.

The cool weather which prevailed in the district during the last 2 weeks of April continued with only slight interruptions throughout the month. The storm areas affecting the region, as a rule, moved across with their centers well to the south, thus causing a prevalence of northerly winds with the resulting cold weather. In fact, in portions of the district the average temperature was lower than during any previous May, with the exception of that of 1907. Frosts were general during the low temperature periods, but the damage was not serious, as in various sections vegetation susceptible to injury had either been killed by the severe weather during April, or else had reached a sufficiently advanced stage of growth to render it immune to the existing cold. Correspondents in the eastern sections report that apples, pears, plums, etc., were not seriously affected, while strawberries and garden truck, being near the surface, sustained considerable injury. The growth of vegetation was greatly retarded by the low temperature, and the season was exceptionally backward, in strong contrast with the promise held out by the abnormally warm weather of March and early April. Many growing plants still show the scars of the late April frosts, and leafing has been delayed and the growth stunted. In fact, in many sections the early leaves are falling and a second growth is starting and in some instances fruit blossoms are also appearing for the second time, where the first ones were destroyed.

The southerly movement of storm areas, referred to above, was especially noticeable during the first half of the month, and, as a consequence during this period the attending rainfalls were mainly confined to the southern portions of the district. During the remainder of the month, the rains were general and continued, and the drought in the northern and western portions was much relieved and forest fires quenched. The total rainfall for the month exceeded the May average in eastern and southern sections with but few exceptions, while there was a deficiency elsewhere. In the sections referred to the number of rainy days was much greater and the percentage of sunshine much less than the normal for May. The storms were free from destructive winds, and, as a whole, the weather on the Great Lakes was favorable for navigation.

TEMPERATURE.

As stated above, the temperature averaged, throughout the entire district, far below the monthly normal, the largest de-

partures being in the south-central portion. Stations reporting the greatest departures are as follows: Battle Creek, Mich., -7.1° ; Lansing, Mich., -6.4° ; Grand Rapids, Mich., -6.2° ; Bucyrus, Ohio, -6.7° ; Defiance, Ohio, -6.2° . The month was consistently cold throughout, the only noteworthy mild period being toward the close of the second decade and extending into the first part of the third decade. The lowest temperatures in the various sections were as follows: 15° on the 3d at Floodwood and Two Harbors, Minn.; 18° on the 4th at Florence, Wis.; 13° on the 14th at Humboldt, Mich.; 13° on the 15th at Eagle Harbor, Mich.; 18° on the 14th at Luther, Mich.; 27° on the 5th at Auburn, Ind.; 25° on the 6th at Bucyrus and Medina, Ohio; 20° on the 6th at Nahasane, N. Y.; 25° on the 6th at Northfield, Vt. As a rule, the absolute maximum temperatures for the month were not as high as those recorded during March and April, and 80° was not reached or exceeded until the latter part of the month, and then only in the interior of the southern portion. The highest temperature reported at any station was 88° on the 21st at Gaylord, Mich.

PRECIPITATION.

As has been stated above, there was a marked deficiency in the rainfall, especially during the first half of the month, in the upper Lake region, except near the southern end of Lake Michigan. The rainfall in the southern portion of the district was generally somewhat in excess, but the distribution geographically was decidedly irregular, as evidenced by the fact that the greatest monthly fall, 7.07 inches, occurred at St. Joseph on the shore of Lake Michigan, while the smallest rainfall, 0.58 inch, occurred not far distant in the interior at Owosso; again, there was a great deficiency in the Maumee Valley, but a corresponding excess in the Cuyahoga Valley. Aside from the drought in the northwestern sections during the first half of the month, the principal feature was the large number of rainy days during the second half, especially in the eastern sections. At many stations in New York State rain fell on 10 or 12 consecutive days.

FOREST FIRES.

The following note from the official in charge at Duluth is of special interest:

Disastrous and widespread forest fires prevailed from early in the month to about the 16th when they were effectually quenched by the rains that fell between that date and the 19th. The fires caused a great amount of damage, and vast tracts of standing timber were consumed as was also a large amount of logs, ties, and poles. A number of settlers lost their homes.

TABLE 1.—Climatological data for May, 1910. District No. 4, Lake Region.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
Minnesota.																			
Cloquet	Carlton	892																	C. I. McNair.
Duluth	St. Louis	1,133	39	46.8	- 1.2	74	27	28	3	30	1.18	- 2.16	0.54	T.	9	9	12	10	U. S. Weather Bureau.
Floodwood	do.	1,257	6	49.2		76	57	15	3	57	1.86		0.75	0.0	7	21	6	2	M. H. Schussler.
Mount Iron	do.	1,510	16	48.0	- 2.5	72	27	19	3	43	1.41	- 2.47	0.66	T.	4	11	12	8	Oliver Iron Mining Co.
Stephens Mine	do.	1,500	3	46.2		75	27	18	3	45	2.17		0.63	T.	10	16	9	6	Do.
Two Harbors	Lake	614	16	46.6	- 0.8	73	8	23	3	40	1.30	- 2.21	0.50	0.0	5	9	10	12	George W. Watts.
Wisconsin.																			
Appleton	Outagamie	795	11	54.4	0.0	77	19	29	4	39	2.31	- 1.14	1.19	0.0	9	19	8	4	Wm. O. Thiede.
Ashland	Ashland	647	16	49.4	- 1.2	78	27	22	3	42	2.76	+ 0.07	1.95	0.0	8	15	10	6	Sam Wheeler.
Cecil	Shawano	804	3	50.9		78	207	24	4	45	1.31		0.76	0.0	6	12	16	3	Louis W. Schmidt.
Chilton	Calumet	860	16	51.4	- 4.7	76	197	26	14	42	1.54	- 2.42	0.45	0.0	7	10	20	1	Daniel V. Jones.
Crandon	Forest	1,060	15	48.2	- 4.5	70	87	19	5	39	3.86	- 1.52	0.76	0.0	3	19	4	8	Calvin T. H. Riggs.
Florence	Florence	1,293	19	47.8	- 3.3	78	191	18	4	50	0.97	- 2.92	0.92	0.0	3	19	3	9	Fred S. Evans.
Fond du Lac	Fond du Lac	800	24	52.0	- 4.1	76	19	25	147	37	1.26	- 1.93	0.31	0.0	6	17	3	11	Geo. W. Marshall.
Grand River Locks	Marquette	616	14	53.2		78	191	28	3	35	2.38	- 2.57	1.30	0.0	5	21	1	9	Jerry Parkinson.
Green Bay	Brown	617	24	51.6	- 2.9	77	19	31	14	30	1.86	- 1.71	0.69	0.0	10	6	12	13	U. S. Weather Bureau.
Herbster	Bayfield	700	2																Wm. Angell.
Iron River	do.	1,096	1	49.6		75	27	23	4	38	2.08		1.27	0.0	9	15	11	5	Harry C. Hall.
Kewaunee	Kewaunee	590	1	47.8		75	19	30	4	33	1.57		0.50	0.0	8	17	4	10	Eugene V. Kimball.
Manitowoc	Manitowoc	616	59	48.9	- 2.7	74	10	29	14	40	1.54	- 1.04	0.45	0.0	9	10	9	12	Johanna Lupa.
Menasha	Winnebago	764	13								1.79	- 1.37	1.12	0.0	7	22	4	5	George T. Allanson.
Menominee Falls	Waukesha	842	1	51.4		76	191	28	4	35	3.95		0.93	0.0	10	13	7	11	Arthur H. Christman.
Milwaukee	Milwaukee	681	40	50.6	- 3.0	76	19	34	3	26	2.64	- 0.78	0.47	T.	10	12	8	11	U. S. Weather Bureau.
New London	Outagamie	762	14	52.8	- 3.2	76	191	28	14	38	1.63	- 2.29	1.00	0.0	6	17	4	10	August H. Pape.
Oconto	Oconto	590	19	50.6	- 3.5	76	19	26	4	36	1.93	- 1.70	1.63	0.0	6	16	10	5	William K. Smith.
Oshkosh	Winnebago	744	21	52.6	- 4.1	79	19	27	3	37	1.49	- 2.33	0.76	0.0	4	17	13	1	Evan Vincent.
Pine River	Waukegan	900	15	52.7	- 4.0	78	19	27	3	37	1.16	- 2.94	0.53	T.	7	6	19	6	George H. Carpenter.
Plum Island	Door	588	2	46.5		67	181	28	5	29	1.95		0.75	0.0	8	10	7	14	John P. Whelan.
Port Washington	Ozaukee	713	17	49.3	- 3.5	75	18	29	4	36	2.03	- 1.65	0.66	0.0	7	7	10	14	Richard C. Kann.
Racine	Racine	633	13	50.4	- 4.7	79	18	31	5	33	3.18	+ 0.35	1.03	0.0	10	10	11	11	Daniel Davis.
Sheboygan	Sheboygan	831	12	49.1	- 3.2	75	19	31	4	29	1.59	- 1.84	0.70	0.0	8	7	16	8	Louis C. Meyer.
Sturgeon Bay	Door	600	12	46.9	- 1.7	71	18	23	14	34	2.40		0.77	0.0	10	17	8	6	Adam N. Dier.
Superior	Douglas	671	1	46.8		71	27	30	3	34	1.06		0.65	0.0	6	18	6	7	Edward B. Banks.
Waupaca	Waupaca	857	14	51.9	- 4.7	80	201	25	4	49	1.18	- 3.09	0.85	0.0	5	10	10	11	James H. Flagg.
Illinois.																			
Chicago	Cook	824	40	53.4	- 3.1	78	22	38	3	29	4.67	+ 1.30	1.34	0.0	13	8	13	10	U. S. Weather Bureau.
Indiana.																			
Auburn	DeKalb	874	14	53.3	- 5.2	81	22	27	5	41	2.05	- 1.66	0.64	0.0	11	14	2	15	Mrs. Josie B. Kuhlman.
Berne	Adams	849		55.4		80	22	30	5	39	4.23		0.93	0.0	13	12	10	9	H. M. Reusser.
Elkhart	Elkhart	801	8																Dr. Miles Medical Co.
Fort Wayne	Allen	775	14	56.4	- 3.8	85	22	30	5	40	2.90	- 0.78	0.60	T.	11	12	7	12	Orion E. Mohler.
Hammond	Lake	598	19	51.6	- 3.5	79	211	33	14	36	5.42	+ 1.38	1.90	0.0	8	10	9	12	Carson W. Whitney.
Howe	Lagrange	886	5	49.4		84	211	30	14	35	3.35		0.85	0.0	9	12	4	15	James E. Zook.
South Bend	St. Joseph	726	17	54.0	- 5.6	80	22	31	14	34	4.33	+ 0.53	1.20	0.0	12	16	2	13	Henry H. Swain.
Whiting	Lake	696		56.3		82	22	37	14	33	5.36		1.65	0.0	8	10	6	9	D. H. Boyd.
Michigan—Upper Peninsula.																			
Baraga	Baraga	623	8	48.6		80	28	29	14	40					15	0	11	n.	D. S. S. & A. Ry.
Bergland	Ontonagon	1,300		47.2		80	19	16	4	48	3.08		1.37	0.0	9	16	1	14	Frank McMonigal.
Blaney	Schoolcraft		3			70	8						T.		11	13	7	n.	Dr. S. S. Hackwell.
Calumet	Houghton	1,246	22	46.3	+ 0.4	71	27	28	14	30	3.57	+ 0.34	1.63	0.5	8	17	7	7	E. S. Grierson.
Chatham	Alger	875	9	44.3		73	19	15	14	45	2.32		0.75	T.	11	9	11	11	U. P. Experiment Station.
Deer Park	Luce	610	9	45.1		75	28	25	3	38	2.20		0.45	T.	7	10	5	16	Mrs. Sara E. McGaw.
Detour	Chippewa	585	9	46.4		75	28	28	6	38	2.55		1.15	0.0	7	16	0	15	n.
Eagle Harbor	Keweenaw	622	11	44.2	- 1.5	70	28	13	15	54	2.26	- 1.23	T.		6	11	12	8	John Nolen.
Escanaba	Delta	612	37	44.1	- 3.9	66	18	26	14	26	1.66	- 1.82	1.04	0.0	11	16	7	8	U. S. Weather Bureau.
Ewen	Ontonagon	1,147	9	40.4		79	19	15	3	46	2.43		1.22	0.0	9	15	14	12	W. B. Hatfield.
Grand Marais	Alger	610	9	42.9		64	28	27	14	24	1.42		0.30	T.	9	14	2	15	Mrs. Lena Truedell.
Houghton	Houghton	608	9	47.0	- 2.2	73	27	25	14	33	3.69	+ 0.40	2.16	T.	13	10	12	9	U. S. Weather Bureau.
Humboldt	Marquette	1,536	13	46.0	- 1.2	83	28	13	14	54			0.0		10	3	18	w.	D. S. S. & A. Ry.
Iron Mountain	Dickinson	1,111	9	50.3		78	19	23	4	39			T.		13	11	6	n.	Chapin Mining Co.
Iron River	Iron	1,504	13	47.1		78	19	16	4	50	4.26		1.86	T.	8	11	15	5	Victor D. Laing.
Ironwood	Gogebie	1,520	7	47.9		75	191	24	3	36	2.01		1.50	0.0	5	18	9	4	Prof. J. V. Brennan.
Ishpeming	Marquette	1,536	10	46.8	- 2.6	77	27	20	14	45	2.31	- 1.79	0.70	0.3	8	8	15	8	Cliv'd. Cliffs Iron Co.
Isle Royale	Keweenaw	610	3	43.0		55	6	32	2	21	1.24		0.80	0.0	4	12	4	15	John H. Malone.
Mackinac Island	Mackinac	831	10																M. I. S. P. Com.
Maple Ridge	Delta		4	45.2		71	19	17	14	40	2.38		1.08	0.0	7	18	1	12	Herman Johnson.
Marquette	Marquette	734	39	46.9	- 2.1	78	27	30	4	36	2.55	- 0.77	0.94	0.3	10	7	14	10	U. S. Weather Bureau.
Menominee	Menominee	581	11	49.8	- 0.6	76	19	28	5	30	1.79	- 1.29	0.91	0.0	4	19	5	7	C. & N. W. Ry.
Newberry	Luce	773	8	45.6		74	27	19	13	48					17	7	7	n.	D. S. S. & A. Ry.
Powers	Menominee	868	11																C. & N. W. Ry.
St. Ignace	Mackinac	593	20	48.1	- 0.6	77	22	32	1	32	2.63	- 0.37	0.80	0.0	9	10	4	17	D. S. S. & A. Ry.
Sault Ste. Marie	Chippewa	614	22	45.6	- 2.1	74	28	28	14	37	3.63	+ 0.38	1.13	T.	9	11	7	13	U. S. Weather Bureau.
Thomaston	Gogebie	1,347	13	46.4	- 4.4	77	19	15	13	48	1.54	- 1.22	0.85	0.0	7	12	14	5	D. S. S. & A. Ry.
Victoria	Ontonagon	1,263		48.0		77	27	20	14	44	2.99		1.47	T.	11	17	7	7	R. S. Schultz, jr.
Watersmeet	Gogebie		1	46.9		78	19	14	4	50									

TABLE 1.—Climatological data for May, 1910. District No. 4—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Michigan—Lower Peninsula—Cont'd.																				
Cheboygan	Cheboygan	611	20	47.2	- 3.4	76	28	26	5	38	2.88	- 0.09	0.90	0.0	8	9	18	4	nw.	E. A. Bouchard.
Clinton	Lenawee	830	20	53.7	- 4.4	84	21	27	5†	41	3.11	- 1.02	1.08	0.0	9	13	14	4	nw.	David Woodward.
Coldwater	Branch	984	13	54.6	- 4.3	82†	21	28†	14	37†	3.36†	- 0.75	1.00†	0.0	11†	17†	5†	8†	nw.	Lake Shore & Mich. So. Ry.
Concord	Jackson		5	53.4				28	14	39	3.60		1.05	0.0	8	14	14	3	nw.	Dr. W. N. Armstrong.
Croton	Newago	685	2	52.4		77	21	27	14	37	2.84		0.55	0.0	10	4	22	5	nw.	G. R.-Mus. Power Co.
Detroit	Wayne	730	39	53.8	- 4.1	76	22	34	31	24	3.65	+ 0.38	1.31	T.	13	7	18	6	n.	U. S. Weather Bureau.
Durand	Shiawassee	799	3	51.4†		79†	28	29†	14	37†	3.83		1.32†	T.	9†	15†	9†	6†	sw.	Grand Trunk Ry.
East Tawas	Iosco	590	13	49.6	- 2.6	77	21	28†	5†	31	2.88	+ 0.48	0.70	T.	7	23	2	6	sw.	Detroit & Mackinac Ry.
Eloise	Wayne	640	13	54.4	- 2.8	80	21†	29	14†	36	3.45	+ 0.88	1.25	T.	11	15	9	7	sw.	John Gilmore.
Flint	Genesee	730	21	54.6†	- 1.3	78†	19†	29	14	34†	3.83	+ 0.17	1.25	T.	9	11	12	8	n.	Wm. L. Fisher.
Frankfort	Benzie	589	6	47.2		68	8	30	5†	25	2.76		0.90	0.0	5	18	0	13	n.	Capt. Geo. Morency.
Ganges	Allegan	665	1	50.8		78	21	32	13†	31	6.31		2.66	0.0	12	18	2	11	nw.	H. H. Hutchins.
Gaylord	Otsego	1,367	5	49.0		88	21	28	31	39	2.25		1.07	T.	4	17	0	14	nw.	Michigan Central R. R.
Gladwin	Gladwin	794	14	52.2	- 2.7	82	21	27	15	45	2.25	- 0.82	1.10	T.	7	24	1	6	nw.	Geo. R. Smith.
Grand Haven	Ottawa	628	29	49.3	- 5.5	73	21	31	14	30	4.50	- 1.16	1.25	0.0	12	12	9	10	nw.	U. S. Weather Bureau.
Grand Rapids	Kent	707	21	52.8	- 6.2	80	21	33	14	32	3.88	- 0.54	1.04	0.0	12	8	11	12	nw.	Do
Grape	Monroe	625	20	54.7†	- 3.4	81†	22	29†	14	38†	3.30†	- 0.15	1.16†	0.0	9†	7†	12†	7†	w.	Joseph W. Morris.
Grass Lake	Jackson	989	4	52.5		81	21	28	14	33	4.18		1.20	0.0	10	9	0	12	nw.	Meno Conklin.
Grayling	Crawford	1,147	21																sw.	Dr. Oscar Palmer.
Harbor Beach	Huron	635	22	49.5	- 2.3	72	23†	25	12	30	1.70	- 1.23	0.70	0.0	6	22	4	10	ne.	Pere Marquette R. R.
Harrison	Clare	1,159	17	51.7	- 2.0	77	20†	25	14	37				0.0	6	16	5	10	nw.	Do.
Harrisville	Alcona	616	26	47.9	- 2.5	76	29	5	31	2.50	- 0.64	0.48		0.0	7	16	7	8	sw.	Dr. D. W. Mitchell.
Hart	Oceana	608	18	52.9	- 1.8	82	18	26	13	41	2.15	- 1.14	0.61	0.0	5	12	12	7	sw.	Pere Marquette R. R.
Hayes	Huron	620	20	48.8†	- 5.8	78†	21†	30†	13	36†	2.16	- 0.85	1.12	0.0	4	16	6	9	nw.	C. F. Leiprandt.
Highland	Oakland	830	18								3.82	+ 0.16	1.19	T.	9				nw.	A. D. De Garmo.
Hillsdale	Hillsdale	1,150	13	52.0	- 4.4	81	21	28	5	35	3.35	- 0.55	1.16	0.0	8	11	7	13	w.	Prof. C. L. Herron.
Holland	Ottawa	610	4	50.5		79	21	27	14	32	4.43		1.25	0.0	12	6	21	4	nw.	City of Holland.
Howell	Livingston	924	18	51.2†		80†	21†	26†	14	37†	3.90†		1.30†	0.0†	9†	11†	8†	7†	nw.	Frank Sharp.
Ivan	Kalamazoo		21	47.7	- 5.3	78	28	19	14	45	1.82	- 1.15	0.45	T.	9	9	16	6	nw.	O. L. Giddings.
Jackson	Jackson	927	13																nw.	Michigan Central R. R.
Jeddo	St. Clair	667	21	51.1	- 3.6	80	20	29	14	40	2.21	- 1.13	0.65	0.0	11	11	12	8	ne.	William Bice.
Kalamazoo	Kalamazoo	955	34	53.4	- 4.8	79	20	33	5†	28	5.44	+ 1.39	1.30	0.0	11	15	9	7	w.	Kalamazoo Asylum.
Lansing	Ingham	881	23	52.6	- 4.7	80	21	28	14	35	4.06	+ 0.50	1.15	T.	10	12	10	9	nw.	State Board of Health.
Lapeer	Lapeer	827	11	52.4	- 3.7	80	28	30	14	36	3.54	+ 0.55	1.13	T.	8	0	26	5	sw.	Michigan Home.
Luther	Mason	586	12	47.3†		68†	7†	28†	5†	33†	1.94†		1.37†	0.0†	17†	3†	6†	n.	n.	Pere Marquette R. R.
Mackinac	Lake	1,028		49.0		78	22	18	14	44	2.48		0.64	T.	10	14	10	7	n.	John W. Nicholson.
Mancelona	Cheboygan	592	14	48.0	- 0.9	78	28	26	5	34	3.19	- 0.37	1.45	0.0	5	20	0	11	w.	Grand Rapids & Ind. R.
Manistee	Antrim	1,121	14	47.8	- 4.8	79	28	21	5	44	0.92	- 1.34	0.30	T.	6	23	1	7	s.	Do.
Midland	Manistee	600	13								2.10	- 0.79	0.87	0.0	6	19	7	5	nw.	Pere Marquette R. R.
Midland	Midland	604	11												16	9			sw.	Do.
Montague	Muskegon	660	7	49.3†		76†	21	28†	5†	32†	3.18		1.20	0.0	6	13	10†	7†	sw.	Gerard A. Whitbeck.
Mount Clemens	Lenawee	811	3	54.0		80	21†	29	15†	35	2.38		0.87	0.0	9	12	9	10	sw.	George J. Tripp.
Mount Pleasant	Macomb	615	10	50.0	- 5.8	90	19	20	5	53	3.35	+ 0.71	1.05	0.0	10	7	16	8	sw.	Herman Orbits.
Muskegon	Isabella	826	11	52.6	- 4.0	80	20	25	14	45	3.16	+ 0.40	0.94	0.0	7	22	1	8	sw.	Pere Marquette R. R.
Old Mission	Muskegon	587	14	50.6	- 5.1	72	19	30	14	24	2.63	- 1.46	0.60	0.0	7	18	4	9	w.	Grand Rapids & Ind. Ry.
Olivet	Grand Traverse	548	16	49.2	- 4.0	79	28	29	4	38	2.43	- 0.58	0.52	0.0	10	6	21	4	ne.	E. O. Ladd.
Omer	Eaton	934	20	51.6	- 5.0	78	21	30	14	29	5.17	+ 1.11	1.41	0.0	10	18	3	10	nw.	Prof. G. A. Knapp.
Onaway	Areneac	616	11	51.6	- 1.1	78	19†	27	16	41	3.02	+ 0.56	0.82	0.0	4	9	11	11	sw.	Detroit & Mackinac Ry.
Ovid	Presque Isle	826	7	49.4		71	9†	25	4†	42					5	8	18		nw.	Do.
Owosso	Clinton	760	20	53.6	- 6.5	84†	22	26	14	40†	4.37	+ 0.95	1.43	0.0	9	16	1	14	sw.	Geo. B. Faxon.
Petoskey	Shiawassee	731	13	52.6	- 6.7	80	21	28	3	35	0.58	- 2.38	0.22	T.	9	7	19	5	ne.	Owosso Sugar Co.
Plymouth	Emmet	660	20																nw.	Grand Rapids & Ind. Ry.
Pontiac	Wayne	725	13	54.0	- 3.7	82	19†	29	14†	41	4.02	+ 1.11	1.95	0.0	5	10	12	9	nw.	Pere Marquette R. R.
Port Austin	Oakland	935	10	53.2	- 3.5	79	21†	30	14	37	3.56	- 0.15	0.90	0.0	11	19	6	6	ne.	Fred W. Shaw.
Port Huron	Huron	618	14																nw.	Pere Marquette R. R.
Reed City	St. Clair	639	35	50.6	- 3.1	78	22	32	12	33	2.96	- 0.28	0.82	0.0	11	9	9	13	n.	U. S. Weather Bureau.
Rosecommon	Oscoda	1,033	14																nw.	Pere Marquette R. R.
Saginaw	Rosecommon	1,141	6												8	18	5		nw.	William Marsh.
Saginaw, W. S.	Saginaw	601	8	54.8		83	23	31	14	33	4.30		1.20	T.	9	5	18	8	se.	Postmaster.
St. James	do.	601	15	53.1	- 5.0	80	21	29	14	37	4.03	+ 0.86	1.45	T.	11	19	0	12	nw.	Robert B. Hudson.
St. Johns	Charlevoix	681	4	48.4		75	15†	20	2	41	2.63		0.70	0.0	7	12	8	11	nw.	Rev. N. Wilhelm.
St. Joseph	Clinton	779	17																nw.	City of St. Johns.
Sandusky	Berrien	593	23	52.4	- 4.9	79	28	35	12	32	7.07	+ 3.17	2.00	0.0	10	10	5	16	sw.	City of St. Joseph.
Saranac	Sanilac	790	1	51.4		78	19	28	5†	42	3.42		1.58	T.	8	10	14	7	w.	Pere Marquette R. R.
South Haven	Ionis	639	15	52.2	- 5.3	81	21	26	14	42	4.29	+ 1.10	1.17	0.0	10	12	3	16	nw.	John Wallington.
Stanton	Van Buren	585	14			78†	27†	33†	4	36†				0.0†	10†	6†	5†		nw.	Mrs. M. E. De Diemar.
Thornville	Montcalm	880	17	51.2†	- 5.1	79†	21	20†	5	45†	4.58		1.45	0.0	16†	4†			sw.	City of Stanton.
Traverse City	Lapeer	975	33	51.4	- 7.0	78	22†	24	14	35	4.08	+ 0.63	0.90	T.	9	12	7		nw.	Dr. J. S. Caulkins.
Vassar	Grand Traverse	588	13	50.3	- 1.7	84	27	30	4	39			0.38	0.0	18	4	9		nw.	Grand Rapids & Ind. Ry.
Webberville	Tuscola	641	9	52.6†		79†	21	27†	14	36†	0.90†		1.85	0.0	16	16†	8†		nw.	Pere Marquette R. R.
West Branch	St. Joseph	842	13	52.6	- 5.4	79†	21	29	14	28	5.79	+ 1.91	1.12	0.0	10	10	6	12	nw.	Chas. A. Palmer.
Woodlawn	Ingham	854	8	53.0		80†	21†	27	14	33	3.97		0.28	0.0	5	14	9		n.	I. R. Wadsworth.
Ypsilanti	Ogemaw	973	7			80	21				0.80		0.52	T.	10	21	0	10	w.	Michigan Central R. R.
	Montmorency			47.4		78	28	22	14	46	2.28		0.52	T.	10	21	0	10	w.	T. C. Mathews.
	Washtenaw	736	25	52.8	- 4.9	80	22	28	14	32	3.95	0.00	1.33	0.0	11	9	18	4	nw.	Orin J. Bemiss.
Ohio.																				
Akron	Summit	1,081	23	55.2†	- 4.2	80†	2	29	6†	39†	4.92	+ 0.99	1.71	0.0	16	11	5	15	s.	Prof. C. R. Olin.
Benton Ridge	Hancock	800	17	56.4	- 4.6	81	21	32	5†	36†	3.05	- 0.37	0.87	0.0	10	8	16	7	sw.	J. W. Powell.
Bowling Green	Wood	670	30	54.7	- 5.0	80	21	30	5	31	3.03	- 1.03	0.81	0.0	6	8	11	12	nw.	G. C. Houskeeper.
Bucyrus	Crawford	1,000	15	54.0	- 6.7	80	21	25	6	42	4.22	- 0.30	1.30							

TABLE 1.—Climatological data for May, 1910. District No. 4—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.					Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, all inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Ohio—Cont'd.																				
Oberlin.....	Lorain.....	855	35	55.1	- 3.7	81	2	27	6	40	3.22	- 0.34	0.64	0.0	12	0	7	24	n.	Prof. F. F. Jewett.
Ottawa.....	Putnam.....	720	18	55.1	- 5.9	80	21	30	5†	36	2.12	- 1.48	0.72	0.0	8	0	14	17	w.	Prof. J. T. Maidlow.
Rome.....	Ashtabula.....	894	3																	G. H. Crosby.
Sandusky.....	Erie.....	629	33	55.8	- 3.4	78	19	38	15	29	1.89	- 1.36	0.45	0.0	14	8	11	12	w.	U. S. Weather Bureau.
Tiffin.....	Seneca.....	775	28	55.9	- 4.3	80	21	32	6	29	2.88	- 0.85	0.58	0.0	13	8	16	7	w.	Prof. T. H. Sonnedecker.
Toledo (1).....	Lucas.....	769	39	55.4	- 4.3	81	22	34	14	25	2.97	- 0.30	0.81	0.0	13	13	13	5	nw.	U. S. Weather Bureau.
Toledo (2).....	do.....	606	6	55.3		80	22	32	14	28	2.87		0.69	0.0	14	16	8	7	n.	J. A. Krance, S. J.
Upper Sandusky.....	Wyandot.....	854	27	56.4	- 4.2	80	1	29	5	34	3.41	- 0.55	1.00	0.0	8	10	15	6	sw.	Prof. R. J. Kiefer.
Vicksburg.....	Sandusky.....	588	17	55.5	- 4.1	84	21	29	6†	42	2.16	- 1.35	0.40	0.0	12	7	14	10	n.	John W. Barr.
Wauseon.....	Fulton.....	780	38	54.3	- 4.6	82	21	28	5	39	2.68	- 1.45	0.82	0.0	14	10	13	8	nw.	Thomas Mikesell.
Wellington.....	Lorain.....	856	16	55.6*	- 4.6	81*	2†	28*	6	41*	3.63	- 0.37	1.00	0.0	19	12	3	16	sw.	W. D. Warren.
Willoughby.....	Lake.....	649	16								3.17	+ 0.56	0.79	0.0	12	6	11	14	n.	C. J. Richardson.
Pennsylvania.																				
Erie.....	Erie.....	713	37	53.8	- 3.5	81	23	37	6	33	3.46	+ 0.03	0.84	0.0	17	8	9	14	w.	U. S. Weather Bureau.
New York.																				
Adams Center.....	Jefferson.....	540	19	53.9	- 0.1	78	22†	30	6	30	4.39	+ 0.94	1.30	T.	19	8	11	12	n.	A. E. Cooley.
Angelica.....	Allegany.....	1,340	27	51.4	- 3.4	79	29	24	6	43	3.12	- 0.66	0.87	T.	20	1	10	20	nw.	Charles P. Arnold.
Appleton.....	Niagara.....	270	19	52.8	- 2.1	80	23	35	4†	34	2.80	- 0.10	0.85	0.0	11	9	8	14	nw.	H. A. Van Wagoner.
Auburn.....	Cayuga.....	715	41	53.6	- 3.1	80	28	29	13	32	4.88	+ 1.41	1.05	0.0	11	17	10	4	n.	A. H. Underwood.
Avon.....	Livingston.....	585	15	57.6	+ 0.2	78	22	32	5†	33	3.20	+ 0.56	0.85	0.0	12	10	11	10		W. G. Markham.
Benson Mines.....	St. Lawrence.....		2																	R. C. Folger.
Blue Mountain Lake.....	Hamilton.....	1,750	10								6.28	+ 1.72	1.35	1.0	10	12	8	11	w.	B. F. Merwin.
Brockport.....	Monroe.....	537	14	54.6	- 1.6	83	20†	33	5	39	3.37	+ 0.38	1.47	0.0	15	10	12	9	w.	W. H. Lennon.
Buffalo.....	Erie.....	767	59	52.3	- 2.2	79	22	35	12	27	2.87	- 0.23	1.06	0.0	17	8	7	16	sw.	U. S. Weather Bureau.
Canton.....	St. Lawrence.....	448	16	52.8	- 3.4	77	28	30	6	34	3.61	+ 0.76	1.15	0.0	16	8	12	11	sw.	Do.
Cape Vincent.....	Jefferson.....	246	5	50.8		78	20	33	14	32	3.61		1.07	0.0	10	7	14	10	sw.	Verne M. Rice.
Carvers Falls.....	Washington.....	243	12	55.2	+ 0.1	80	24	29	6	41	3.88	+ 1.15	0.98	0.0	9	18	6	7	s.	Washburn Fancher.
Chazy.....	Clinton.....	151	10	55.3	+ 0.5	78	24†	31	5	36	3.87	+ 0.89	1.50	0.0	7	16	2	13	n.	W. R. North.
Dannemora.....	Clinton.....	1,490	5	52.5		75	29	29	5	33	3.16		1.45	T.	16	7	12	12	w.	W. N. Thayer.
Elba.....	Genesee.....	500	11	52.0	- 3.1	79	23	29	5	34	3.96	+ 0.85	1.50	0.0	10	14	8	9	sw.	Jos. S. Wilford.
Fayetteville.....	Onondaga.....	530	9	55.3		80	21	29	13	42	3.84	+ 0.84	1.16	0.0	12	10	9	12	nw.	Dana H. Wells.
Gabriels.....	Franklin.....	1,729	8	50.2		79	20	23	6	50	4.73		1.30	T.	16	8	9	14	nw.	Sanatorium.
Herkimer.....	Clinton.....	622	8	53.6		80	24	31	5	37	3.81		1.57	0.0	12	23	2	6	w.	J. W. Harkness.
Hemlock Lake.....	Livingston.....	900	12	53.0	- 3.5	75	29	31	13	28					10	6	15	nw.	D. H. Westbury.	
Hunt.....	do.....	1,321	11	54.8	- 1.8	78	19†	27	13	43	3.67	+ 0.01	0.82	0.0	12	8	17	6	sw.	W. S. Barrager.
Ithaca.....	Tompkins.....	928	32	54.2	- 2.8	80	29	32	16	38	4.20	+ 0.77	1.38	0.0	17	7	9	15	nw.	U. S. Weather Bureau.
Keene Valley.....	Essex.....	1,000	12	52.3	- 1.2	80	20	25	5	48	2.97	- 0.21	0.96	0.5	11	11	6	14	s.	E. R. Wells.
King Ferry.....	Cayuga.....		10								4.01	+ 1.08	0.72	0.0	12	10	11	16	nw.	Lucius A. Goodyear.
Lake George.....	Warren.....	350	13	55.6	- 0.2	86	24	31	6	39	5.04	+ 2.02	1.27	0.0	11	3	20	8	s.	Charles Forsell.
Lake Placid Club.....	Essex.....	1,864	2	46.5		71	17	21	6	42	4.47		1.82	5.2	14	7	15	9	sw.	Henry van Hovenberg.
Le Roy.....	Genesee.....	920	20	53.6	- 3.4	78	20	32	5†	35	3.19	- 0.10	0.96	T.	17	9	5	17	sw.	F. W. Ball.
Lockport.....	Niagara.....	450	23	52.8	- 4.1	80	23	31	5	31	2.83	+ 0.08	0.55	0.0	16	8	4	19	sw.	J. E. Wakeman.
Lowville.....	Lewis.....	900	43	51.4	- 3.0	80	29	28	16	43	3.47	+ 0.58	1.28	0.0	5	13	9	9	w.	Charles J. Rice.
Lyndonville.....	Orleans.....		14								2.41	- 0.04	0.62	0.0	11	17	4	10	sw.	Milton St. John.
Moirs.....	Franklin.....	200	10	54.4	- 0.6	78	17	30	5	33	4.81	+ 1.68	1.03	0.0	12	7	8	16	w.	C. E. McBride.
Nehassee.....	Hamilton.....	1,750	2	49.1		78	29	20	6	48	5.43		1.51	0.0	14	11	6	14	e.	A. C. Heyburn.
North Lake.....	Herkimer.....	1,822	9	51.8	+ 0.6	75	19	25	11†	43	6.07	+ 1.65	1.43	0.0	8	13	10	8	nw.	H. A. Paull.
Ogdensburg.....	St. Lawrence.....	175	26	54.4	- 2.1	78	28	34	6†	31	2.96	+ 0.09	0.78	0.0	14	6	17	8	w.	State Hospital.
Old Forge.....	Herkimer.....	1,733	2	52.6		80	20†	21	6	40	6.51		1.64	0.0	15	7	6	18	w.	Stuart W. Nelson.
Oswego.....	Oswego.....	335	40	51.3	- 3.4	77	20	37	12	31	3.57	+ 1.72	1.08	0.6	13	10	7	14	w.	U. S. Weather Bureau.
Otto.....	Cattaraugus.....	1,410	6	52.4		75	2†	29	13	36	3.44		1.00	0.0	17	12	9	10		William Winke.
Palermo.....	Oswego.....	460	51								4.78	+ 2.09	2.01	0.0	13	11	8	12	se.	E. B. Bartlett.
Perry City.....	Schuyler.....	1,038	30	53.2	- 2.5	80	29	28	16	43	5.03	+ 1.79	1.64	0.0	15	9	11	11	nw.	W. H. Jeffers.
Philadelphia.....	Jefferson.....	485	4	53.4		79	21	32	6†	38	4.11		1.39	0.0	12	3	20	8	w.	E. D. Babcock.
Plattsburg.....	Clinton.....	170	60	54.7	- 0.2	80	24	34	5†	31	4.85	+ 2.27	1.50	0.0	12	11	13	7	se.	T. P. Davison.
Potsdam.....	St. Lawrence.....	300	34	54.0	- 1.1	78	28†	27	15	36	3.31	+ 0.15	1.38	0.0	12	7	5	19	sw.	Lloyd W. Weed.
Raquette Lake.....	Hamilton.....		2	51.2		74	28	29	6	36	5.93		1.68	0.0	15	7	6	18	sw.	R. J. Dunning.
Rochester.....	Monroe.....	523	81	54.0	- 2.7	80	20	34	5	28	2.75	- 0.19	0.88	0.0	18	9	7	15	w.	U. S. Weather Bureau.
Romulus.....	Seneca.....	719	18	54.7	- 3.3	78	20†	31	14	33	4.90	+ 1.39	1.78	0.0	11	6	10	15	nw.	John H. Coryell.
Shortsville.....	Ontario.....	740	11	53.6	- 2.5	79	20	32	13†	34	3.18	+ 0.51	0.77	0.0	16	10	12	9	w.	C. H. Latting.
Skaneateles.....	Onondaga.....		15								5.48	+ 1.99	0.95	0.0	16					Edward Conron.
Syracuse.....	do.....	597	8	53.7	- 3.6	77	22	34	13	31	4.76	+ 1.37	1.46	T.	15	6	8	17	w.	U. S. Weather Bureau.
Ticonderoga.....	Essex.....	344	12	52.5	- 4.2	79	29	38	8	34	5.20	+ 2.19	2.00	0.0	11	20	6	5	n.	Eva M. De Lano.
Trudeau.....	do.....	1,620	17																	Daniel Smith.
Tupper Lake.....	Franklin.....	1,552	10																	Aaron W. Maddox.
Volusia.....	Chataqua.....	1,167	11	53.7	- 1.6	80	21†	28	13	32	2.76	- 0.60	0.86	0.0	14	7	16	8	w.	Benjamin Breads.
Watertown.....	Jefferson.....	737	18	53.8	- 3.6	83	20	28	6	43	4.60	+ 0.96	1.25	0.0	11	2	20	9	s.	L. L. Allen.
Wedgewood.....	Schuyler.....	1,430	21	52.8	- 3.1	77	21	30	14	29	4.31	+ 0.54	0.72	0.0	19	12	12	7	nw.	Orlando F. Corwin.
Westfield.....	Chataqua.....	837	14	53.1	- 3.7	79	23	31	5†	35	4.61	+ 0.84	0.76	0.0	16					John R. Rogers.
Youngstown.....	Niagara.....		8								2.11		0.80	0.0	11	5	26	0	sw.	B. V. Brookins.
Vermont.																				
Burlington.....	Chittendon.....	404	3	53.2	- 0.7	79	24	30	6	38	3.4.									

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2.—Daily precipitation for May, 1910. District No. 4, Lake Region.

Stations.	River basins.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Minnesota.																																		
Cloquet.....	Lake.....																																	
Duluth.....	do.....								.01									.07	.47	.17	.06	T.			.25	.06				.08	.01		1.18	
Floodwood.....	do.....																	.02	.51	.03	.75			.23	.10					.22			1.86	
Mount Iron.....	do.....																	T.		.06	.05			.30	.40								1.41	
Stephens Mine.....	do.....	T.							T.									.04	T.	.33	.03	.63	.34		.30	.33			T.	.02	.11	.04	2.17	
Two Harbors.....	do.....																		.50	.20	.35	.15							T.	.10			1.30	
Wisconsin.																																		
Appleton.....	Fox.....																	1.19			.11	.19	.07	.15	.03	.01			.10	.37			2.31	
Ashland.....	Lake.....																	1.95		.06	.21	.03	.14	.04	.12			T.	.21			2.76		
Cecil.....	Fox.....																	.73	.03		T.	.08	T.	.09					.06	.32			1.31	
Chilton.....	do.....		.02															T.	.45	T.	.25	.03	T.	.45	T.	.02				.32	T.		1.31	
Crandon.....	do.....																	T.	.76	T.	.08	T.		.02									0.86	
Florence.....	Menominee.....																	*	.92	.05												0.97		
Fond du Lac.....	Fox.....	T.																.31			.25		.08	.25		.10	T.		.27			1.26		
Grand River Locks.....	do.....																	1.30			.28	.27	.05						.48			2.38		
Green Bay.....	Lake.....																	24	.46			.14	.05	.11	.21	.29	.01		.34	T.		.01	1.86	
Herbster.....	do.....																																	
Iron River.....	do.....																	1.27	T.	.02	.12	.07	.04	.14	.12				.02	.28			2.08	
Kewaunee.....	do.....																	10	.50			.21	.07	.13	.14					.41			1.57	
Manitowish.....	do.....		.05															.40			.17	T.	.11	.26	.06	.04				.45		T.	1.54	
Menasha.....	Fox.....																	1.12		.04	.07		.04		.06							1.79		
Menominee Falls.....	Lake.....		.57															.32		.42	.93	.30	.61	.08					.13	.17	T.	3.95		
Milwaukee.....	do.....		.41					.04	.25	T.								.20		.33	.41	.08	.45		T.				.39	.08	T.	2.64		
New London.....	Fox.....																	1.00		.16	.12	.10	.10		T.				.15			1.63		
Oconto.....	Lake.....																	1.03		.30	.06		.11	.05					.38			1.93		
Oshkosh.....	Fox.....																	.76			.10	.18	T.					T.	.45			1.49		
Pine River.....	do.....																	.01	.53	.01	.19	.09	.04	T.				T.	.29			1.16		
Plum Island.....	Lake.....																	.75	.15		.30		T.	.25	T.				.02	.30	.03	.15	1.95	
Port Washington.....	do.....		.42						.05									.32			.10		.42	.66					.06			2.03		
Racine.....	do.....		.47	.12					.40									.20			.20	.45	.58	.01	T.				.03	.72	T.		3.18	
Sheboygan.....	do.....		.09															.30			.21	.05	.70	.03					.07	.14			1.50	
Sturgeon Bay.....	do.....																	.77			.09	.33	.13	.27	.12	.04			.02	.61	.02	T.	2.40	
Superior.....	do.....																	.65	.19	T.									.05				1.06	
Waupaca.....	Fox.....																	.03	.85	.02	T.			.21	.07								1.18	
Illinois.																																		
Chicago.....	Lake Michigan.....	.34	.13						.47	.09		.08	.05					T.	.25			.02	.17	.82	.63			T.		.28	.34			4.67
Indiana.																																		
Auburn.....	Maumee.....	.11	.02	.64						.03		.08													.18	.06				.21			2.05	
Berne.....	do.....	.40	.35	.65				.20				.45						.36			.26			.28	.18					.22		.14	4.23	
Elkhart.....	St. Joseph.....																																	
Fort Wayne.....	Maumee.....	.07	.51	.15					.04	.05		.42													.38		T.	T.		.07		.03	2.90	
Hammond.....	Lake Michigan.....		1.16						.33									.80						.14		.15	1.90	.22		.72			5.42	
Howe.....	St. Joseph.....	.30		.85					.08																.15	.18				.55	.05		3.35	
South Bend.....	do.....	.67	.40	.09					.12	T.		.10						.32			.29			.57	.03	.25	.41	.20		1.20			4.33	
Whiting.....	Lake Michigan.....	.20	.13					.41										.37						.96	.65	.02				.52			5.36	
Michigan—Upper Peninsula.																																		
Baraga.....	Lake.....																																	
Bergland.....	Ontonagon.....								.02									1.37	.47	.37	.15	T.		.34		.04				.14	.18		3.08	
Blaney.....	Manistique.....																																	
Calumet.....	Lake.....	T.	T.															1.65	.28	.52	.35		.23	T.	T.	.02			T.	.32	.22		3.57	
Chatham.....	do.....								.09									.42	.14	.18	.16	.09		.12	.02				T.	.75	.30	.05	2.32	
Deer Park.....	do.....								T.									.15	T.					.30	.35	.25				.40	.45	.30	2.20	
Detour.....	St. Marys.....																	.05	*	1.50	.28	.20	T.		.15	.15			.56	.12	.40	2.55		
Eagle Harbor.....	Lake.....	T.																.02	.02	.01	.03	.03		.02	T.				.10	T.		2.26		
Escanaba.....	do.....								.02									T.	.12	T.	.24	.21	.39	.05	.05				.07	.30		.03	1.60	
Ewen.....	Ontonagon.....								.05									T.	.22	T.	.24	.21	.39	.05	.05				.09	.13		.24	2.43	
Grand Marais.....	Lake.....													.02					.10	.20			.10	.30	.20				.20	.10	.20	1.42		
Houghton.....	do.....	T.							.02						.02			.35	.85	.07	.41	.25	.15	.09		.05			.04	.36	.04	.01	3.60	
Humboldt.....	Escanaba.....																																	
Iron Mountain.....	Menominee.....																																	
Iron River.....	do.....																	T.	.86	.27		.30	.20	.06		.17			.10	.30	T.		4.26	
Ironwood.....	Lake.....																	1.50			.21	T.	.08		.15				T.	.07	T.		2.01	
Ishpeming.....	Escanaba.....								T.									.70	.20	.30	.50	.10	.40		T.				.32	.06		.06	1.24	
Ile Royale.....	Lake.....																	T.	.80	T.	T.												2.31	
Mackinac Island.....	do.....																																	
Maple Ridge.....	do.....																						.42	.18		.12				.37	.08	.13	2.38	
Marquette.....	do.....																	T.	.86	.02	.20	.34	T.	.94	.01	.01				T.	.06	.04	.07	2.53
Menominee.....	Menominee.....																	.91			T.	.52			.10					.26	T.		1.79	
Newberry.....	Tequamenon.....																																	
Powers.....	Lake.....																																	
St. Ignace.....	do.....																	.20	.18	.12				.30	.80				.24	.30	.40		2.65	
Sault Saint Marie.....	St. Marys.....								.04									.35	.35	.19				.43	1.13				T.	.41	.35	.38	3.63	
Thomaston.....	Lake.....																	T.	.85	.05	.09	.20	T.						.14	.05		1.54		
Victoria.....	Ontonagon.....																	1.47	.11	.28	.15	.01		.31		.04	.02							

TABLE 2.—Daily precipitation for May, 1910. District No. 4—Continued.

Stations.	River basins.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Michigan—Lower Peninsula—Cont'd.																																		
East Tawas.	Lake.		.50															.45					.45	.70					.18		.30	.30	2.88	
Eloise.	Rouge.	.46	.25						.02					T.				.23			.18		.39	.41	.04	T.		T.		.14	.05	.28	3.45	
Flint.	Saginaw.	.30	.12	.25										T.					.50			.10		.68						.20	.50	.30	3.83	
Frankfort.	Betsie.																	.46					.77	.53						.90	.10	.26	1.76	
Ganges.	Lake.	.27	.32	.02					.14									.36	.03	.19			.80	.66						.40	.01	.11	6.31	
Gaylord.	Cheboygan.																	1.07	T.				.06						T.		1.03	.09	2.25	
Gladwin.	Saginaw.		.60															.15					.10	.10						.10	.13	.05	2.25	
Grand Haven.	Grand.	.01	.93					.03	.07	T.								.61			.10	.89	.73	.64			T.		.07	.34	T.	.08	4.50	
Grand Rapids.	do.	.05	.95					T.	.02					T.				.51	.01		.08	.42	.42	.78			T.		T.	.44	.03	.17	3.88	
Grape.	Raisin.	.22	.16						.05									.26			.44		.16	.60						.08		.33	3.38	
Grass Lake.	Grand.	.60	.20															.28		.18			.93	.40		.21				.23	.05	.10	4.18	
Grayling.	Au Sable.																																	
Harbor Beach.	Lake.		.70															.30				.10		.30						.10	.20	1.70		
Harrison.	Saginaw.																																	
Harrisville.	Lake.		.38															.48						.38	.44						.27	.31	.24	2.50
Hart.	Pentwater.		.23															.55						.51	.61					.25			2.15	
Hayes.	Pigeon.		.12															.45						.47						T.			2.16	
Highland.	Huron.	.80	.19															.32					.23	.37	.43					.15	.18	.15	3.82	
Hillsdale.	Saint Joseph.	.66	.16															.31					.07	.28	.53					.29	T.	.05	3.35	
Holland.	Lake.	.11	.04	.02					.05									.60				.12	.02	.54	.25	.04					.53		.11	4.43
Howell.	Saginaw.	.50	.30															.40					.40	.40							.20	.30	3.90	
Ivan.	Manistee.		.05											T.				.30	.05					.45	.24				.05	.30	.18	.20	1.82	
Jackson.	Grand.																																	
Jeddo.	St. Clair.	.12	.65						T.	.07								.26	.03			.03		.12	.36					.16	.17	.24	2.21	
Kalamazoo.	Kalamazoo.	.73	.97						.03									.25	.13			.10	.30	.73						.55	.15	.50	5.44	
Lansing.	Grand.	.48	.15	.02						T.								.46				.10	.70	.50			T.			.37	.03	.25	4.06	
Lapeer.	Saginaw.		.13	.07	1.00													.35				.14		.35	.90						T.	.45	.15	3.54
Ludington.	Pere Marquette.		.05															.42																
Luther.	Manistee.		.18						T.	.08								.64	.11					.58	.44	T.				.05	.26	.02	1.24	
Mackinaw.	Lake.																	.24						1.45	.80					T.	.30	.40	3.19	
Mancelona.	do.																	.15						.13	.30					T.	T.	.20	0.92	
Manistee.	Manistee.		.04															.50						.87	.22	.17				T.	.30	T.	2.10	
Midland.	Saginaw.																	.29					1.20		.73					.54	T.		3.18	
Montague.	White.		.32							.10								.25							.05	.42					.13		2.38	
Morenci.	Maumee.	.27	.87	.01					.07									.30					.13		.50	.30	.10	T.			.20	.15	.10	3.35
Mount Clemens.	Clinton.	.50	.05								T.							.57						.41	.54					.32	.21	.17	3.16	
Mount Pleasant.	Saginaw.		.94															.40						.50	.60						.20		.35	2.63
Muskegon.	Muskegon.		.48	.10					T.									.31	.20	.02				.82	.51	.03				.46	.15	.18	2.43	
Old Mission.	Lake.														.05			.58	.13					1.10	.60			T.		.51	T.	.11	5.17	
Olivet.	Kalamazoo.	.68	.41	.02					.03									.60							.82						.80		3.02	
Omer.	Lake.		.80																															
Onaway.	Cheboygan.																																	
Ovid.	Grand.	.24	.07	.22					.01		T.								.54					1.43		.15					.25		.46	4.37
Owosso.	Saginaw.		.22	.02														.09	.02			.01		.02	.15	.01				.04			0.58	
Petoskey.	Lake.																																	
Plymouth.	Rouge.		.95																															
Pontiac.	Clinton.	.60	.90	.03														.22	.10												.10	.03	.03	3.56
Port Austin.	Lake.																																	
Port Huron.	St. Clair.	.15	.78						.01	.01	T.							.37						.02		.59	.46				.12	.22	.23	2.96
Reed City.	Muskegon.																																	
Rosecommon.	Au Sable.																																	
Saginaw.	Saginaw.	T.	.10	.10					T.		T.							.65				.15		.25	.90			T.			.15	.50	.40	4.30
Saginaw, W. S.	do.	.05	.45	T.					.04	.01	T.							.57				.06		.39	.64			T.			.15	.22	.45	4.03
St. James.	Lake.																	.30	.10					.40	.63					.10	.70		2.63	
St. Johns.	Grand.																																	
St. Joseph.	St. Joseph.	.80	.10	.30					.50									.50						.87	.35	.00	.40				.25		.70	7.07
Sandusky.	Lake.		.58	.09														.38							.35	.38					.38	.20	3.42	
Saranac.	Grand.	.17	.17	.07														.50	.08					.05	.74	.93				.33	.25	.42	2.29	
South Haven.	Lake.	.70	.80																															

TABLE 2.—Daily precipitation for May, 1910. District No. 4—Continued.

Stations.	River basins.	Day of month.																															Total	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
New York.																																		
Adams Center.....	Lake.....	.02	.20	1.30	.11		T.	T.	T.	.24	.08				T.				.36		.60	.12	.08	.09	.17	.06	.21	.11	.02	.12	.41	.09	4.39	
Angelica.....	Genesee.....	.16	.49	.87	.05				.03	.09	.01	.05			T.				.05		.07	.14	.09	.03	.26	.23	.05	.11		.08	.22	.04	3.12	
Appleton.....	Lake.....	T.	.85	.33						.35	.11								.32		.13	.05		.25	T.	.27	T.	.07		T.	.07		2.80	
Auburn.....	Oswego.....	T.	.30	1.05						.45	.16	.12							.35		.55		.26		.55	.75		.10			.40		4.88	
Avon.....	Genesee.....	.21	.27	.85	.05					.02	T.	T.								.02	.60	T.	T.	.60	T.			.15		.03	.33	.07	3.20	
Benson Mines.....	St. Lawrence.....																																	
Blue Mountain Lake.....	Raquette.....		.53	1.27	T.	T.				1.06	.27				T.					T.	.15			T.		1.35	.42	.17			.72	.34	6.28	
Brockport.....	Lake.....	.16	.07	1.47	.03					.03	.10								.23		.10	.18	.35	.07	.12	.02		.08	.36				3.37	
Buffalo.....	Lake.....	.06	.99	.27					T.	.13	.03	.02			T.	T.			.15	.27	.30		T.	.10	.03	.23	.02	.01		.11	.05	.10	2.87	
Canton.....	St. Lawrence.....	T.	1.03	.30					T.	.16	.16	T.	T.		.01				.26	.05	.11	.45		.32	.11	.17		.08		.03	.30	.07	3.61	
Cape Vincent.....	do.....		1.07	.06						.35									.61			.31			.42	.14	.05	.13			.47		3.61	
Carvers Falls.....	Lake.....		.42	.98	.11					.22											.30				.32	.65	.31					.57	3.88	
Chazy.....	do.....	.08	1.00							.63												.30				1.50	.01					.35	3.87	
Dannemora.....	do.....		.13	1.45	.92			.02		.32	.19	T.			T.				*	.13	.16	*	.66	T.	.01	.02	.72	.04	*	.12	*	.17	.10	5.16
Elba.....	Lake.....	T.	.40	1.50						.02	.50	T.	T.						.05		.20	.40	.60	.05	.20			T.		T.	.40	T.	3.90	
Fayetteville.....	Oswego.....	.03	.30	.60	T.				.02	.50	T.	T.							.26		T.	.51	T.	.03	.14	1.10		.05		T.	.30		3.84	
Gabriels.....	Lake.....	T.	.10	1.30	.24			.01		.11	.07	T.			T.				.09	.25		.56	.01		.02	.65	.10		.06		1.08	.08	4.73	
Harkness.....	do.....		.05	1.36	.21					.19	.04								.10			.38	.05			1.15	.11				.07	.10	3.81	
Hemlock Lake.....	Genesee.....																																	
Hunt.....	do.....	.82	.50	.45					.12										.10		.17				.80	.10		.07		.18	.20	.16	3.67	
Ithaca.....	Oswego.....	.23	.12	.50					.02	.29	.03	.07							.11		.35		.15		.92	.47	.09	.28	.01	.09	.23	T.	4.20	
Keene Valley.....	Au Sable.....			.96	.18					T.	.09	.04							.13	.18		.13			.84	.10					.18	.14	2.97	
King Ferry.....	Oswego.....	.21	.22	.38						T.	.70		.10						.09			.52		.49		.28	.72		.15		T.	.15	4.01	
Lake George.....	Lake.....	T.	.11	.21						.25	.14				T.	T.			.57			.36				.11	.13	.36	T.		1.27	.52	5.04	
Lake Placid Club.....	Au Sable, W. Br.....	T.	.05	1.82	.12			.10		.14	.01			.05					.12	.05	T.	.50			.06	1.30					.10	.05	4.47	
Le Roy.....	Genesee.....	.29	.12	.96					T.	.05	.15	.09							.12		.15	.05	.28	.40	.13	.10	T.	.08		.11	.10	.03	3.19	
Lockport.....	Lake.....	.13	.45	.55						.07	.05	.02			T.				.31		.09	.09	T.	.29	.04	.33	.03	.04		.01	.35	T.	2.83	
Lowville.....	do.....			1.28						.83									.83			.38				.58					.40		3.47	
Lyndonville.....	do.....	.56	.62	.56						.08									.08		.04		.09		.18		.10	.09		.03	.06		2.41	
Moirs.....	St. Lawrence.....	T.	.37	1.03		T.		.02		.46	.15	T.							.45		.27				.18	.90		.13		T.	.80	.05	4.81	
Nehasano.....	Lake.....	T.	.17	1.51	.03					.21	.15	.16			T.				.26	.56		.40			.13	1.01			.05		.40	.39	5.43	
North Lake.....	do.....		1.40	.45															.67			.60			1.43	.20			1.02			6.07		
Ogdensburg.....	St. Lawrence.....		.04	.70			T.			.40	.07		.02	.02	T.				.07	.02		.78			.35	.16	T.	.03	T.	*	.25	.05	2.96	
Old Forge.....	Lake.....		.38	1.64	.01					.38	.04	.04							.62	.52		.37				.19	1.10	.01	.02		1.10	.09	6.51	
Oswego.....	do.....	.22	.53	.62					.01	.08	T.								.59		.27	.04			.79	.05		.03		.29	.05		3.57	
Otto.....	do.....	.23	.10	1.00	.58				.06	T.		.02			.06						.10	.08	.05	.10	.28	.03	.09		.16	.42	.08		3.44	
Palermo.....	Lake.....	.03	.01	.50	.35				.06	.20									.35		.20	1.00		T.	2.01	.01			.01	.05		4.78		
Perry City.....	do.....	.07	.39	.66					.05	.28		.15							.24	.05		1.64		.31	.68	.05	.19		.13	.14	T.	5.03		
Philadelphia.....	St. Lawrence.....	T.	.07	1.39	.04				.11			.02			T.					.36	.34		.75		.23	.39	T.	.04		.37	.02	4.11		
Plattsburg.....	Lake.....		.02	1.50	.52	T.			.35		.02								.07			.43			.04	1.20	.40		.10		T.	.20	4.85	
Potdam.....	St. Lawrence.....	T.	*	1.38	.01	T.			.18	.07					T.				.12			.56	.01		.12	.37	T.	.15		.25	.09	3.31		
Raquette Lake.....	Raquette.....	*	.22	1.68	.11				.30	.11	.22			.06					.24	.12		.77		.16	*	1.09	.08		T.		.33	.44	5.93	
Rochester.....	Genesee.....	.32	.47	.43					.01	.07	.11	T.	T.					.06	.15		.21		.04	.18	.24	.02	.03	.02		.22	.15	.02	2.75	
Romulus.....	Oswego.....		1.20	.03					T.	.28									.06		T.	.31	T.	.13	.03	1.78		.23		.03	.82		4.90	
Shortsville.....	do.....	.02	.38	.76	.05					.06	T.	.12							.18		.12	.12	.02		.10	.77	T.	.08		.15	.17	.08	3.18	
Skaneateles.....	do.....	.24	.30	.95	.03				T.	.45	T.	.12							.35		.79	.65		.20	.82	.05	.14		.20	.25	.03	5.48		
Syracuse.....	do.....	.27	.25	.37		T.			T.	.30	.06	T.							.27		.43	.96	.06		.56	.90	T.	.01	.01	.13	.18	T.	4.76	
Ticonderoga.....	Lake.....	T.		.90						.48	T.								.15	.03		.51	.01	T.	.25	2.00	.90			.23	.12	5.20		
Trudeau.....	do.....																																	
Tupper Lake.....	St. Lawrence.....																																	
Volusia.....	Lake.....	.23	.38	.86					.02	.02				.03					.05		.22			.02	.05	.22			.05	.48	.32	2.76		
Watertown.....	do.....	.10	.25	1.25					.25	T.					T.				.30	.25		.60			.50	.50		T.	.10	T.	.50		4.90	
Wedgewood.....	Oswego.....	.05	.38	.63	.01				.02	.18		.06									.55	.15	.21	.01	.46	.72	.29	.14	.01	.13	.27	.04	4.31	
Westfield.....	Lake.....	.09	.11	.76					.04	.16					.56				.17		.09	.31	T.	T.	.09	.37	.03	.16		.29	.71	.67	4.61	
Youngstown.....	do.....	.09	.80	.15					.12		.07								.36		.07	.23		.04		.16				T.	.02	T.	2.11	
Vermont.																																		
Burlington.....	Lake.....	.03	.33	.89	.06			T.		.23	.02	T.	T.						.32		.27		T.	T.	.27	.45	.22	T.		.06	.27	3.42		
Cornwall.....	do.....	T.	.05	.75	.40			T.		.20		.01							.30		.25	T.			.20	1.40	T.			.10	.30	3.96		
Enosburg Falls.....	do.....	T.	.03	1.45	.46			T.		.43	.05	T.							.28	.02		.05	.02		T.	1.01	.03			.14	.12	4.09		
Northfield.....																																		

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 4, Lake Region.

Date.	Duluth, Minn.		Wisconsin.						Chicago, Ill.		Fort Wayne, Ind.		Michigan, Upper Peninsula.										Michigan, Lower Peninsula.					
			Florence.		Green Bay.		Milwaukee.						Escanaba.		Ewen.		Houghton.		Marquette.		Sault Ste. Marie.		Alpena.		Battle Creek.		Cadillac.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	61	33	70	35	65	39	55	40	54	42	80	55	50	38	67	32	64	38	68	39	62	31	52	36	66	48	.....	.....
2	40	30	54	32	49	38	52	35	49	40	70	58	44	34	60	16	42	32	41	32	50	37	45	37	63	44	.....	.....
3	43	28	48	22	49	33	46	34	45	38	58	42	44	33	49	15	44	30	39	32	46	32	50	34	55	39	.....	.....
4	47	32	57	18	52	32	48	36	45	40	59	31	48	31	58	22	53	27	44	30	49	32	50	32	57	31	.....	.....
5	64	34	61	24	58	33	53	37	50	42	61	30	51	31	64	21	60	33	50	33	53	30	57	31	60	32	.....	.....
6	57	37	66	28	62	36	54	39	55	43	64	32	54	39	69	23	67	35	57	45	60	34	68	34	62	32	.....	.....
7	67	44	69	38	65	41	52	43	51	46	58	35	55	38	74	31	71	40	62	46	69	34	68	38	60	37	.....	.....
8	70	46	72	34	71	45	54	44	54	45	59	50	59	40	72	34	69	42	75	50	72	35	58	38	57	42	70	52
9	63	41	67	44	67	46	68	49	65	47	71	46	61	44	60	37	59	46	61	48	51	44	65	42	69	43	64	43
10	58	35	59	40	67	42	70	47	72	53	73	43	60	37	57	35	52	40	58	36	47	36	61	36	68	38	60	40
11	53	28	53	27	59	36	47	41	59	43	65	44	48	32	50	23	49	36	49	34	40	37	52	31	66	41	50	30
12	56	31	52	27	56	35	55	39	53	43	61	32	52	33	52	25	48	34	44	34	39	34	52	31	58	33	51	30
13	44	35	53	28	52	32	48	39	51	41	52	32	48	34	49	22	45	31	40	27	43	32	42	33	50	32	44	30
14	46	32	60	21	59	31	47	36	51	41	59	32	48	26	48	15	53	25	55	27	56	28	46	31	56	28	60	25
15	61	42	68	32	68	42	57	42	60	46	65	31	53	43	72	42	73	41	69	45	65	35	54	31	62	36	66	35
16	50	41	59	41	64	47	57	46	68	52	74	43	53	44	58	50	61	47	62	46	58	38	51	42	66	41	.....	.....
17	54	45	55	42	61	50	59	49	62	53	63	52	52	45	58	41	50	41	56	44	55	44	59	46	63	51	.....	.....
18	66	44	70	40	73	45	75	49	76	49	75	49	66	43	64	35	60	41	56	42	45	37	62	41	69	46	.....	.....
19	49	35	78	40	77	48	76	54	77	57	79	48	59	45	79	43	50	40	68	39	54	37	52	41	75	48	74	43
20	59	38	73	51	74	57	65	52	68	58	77	56	60	49	71	50	67	43	75	45	65	46	56	42	71	56	71	55
21	47	36	64	44	61	50	60	46	71	49	82	59	56	45	59	39	52	43	50	41	61	45	72	52	81	31	75	49
22	52	39	55	40	61	47	59	44	78	49	85	64	55	41	54	37	54	42	43	40	57	44	60	48	79	59	78	55
23	39	35	63	38	61	46	62	43	59	45	76	57	50	40	59	38	49	39	42	37	49	41	53	48	75	49	68	46
24	55	35	55	42	58	45	64	50	67	54	75	52	58	41	50	35	48	39	42	37	55	36	68	43	65	47	60	42
25	61	34	55	32	53	40	51	42	57	46	67	42	51	35	54	38	50	37	42	36	44	36	54	39	61	42	55	35
26	60	39	65	28	61	36	52	41	57	44	66	40	59	35	63	26	63	36	58	38	50	41	59	40	60	36	58	33
27	74	47	78	28	72	42	63	47	58	46	73	37	58	42	76	33	73	40	78	42	70	36	70	38	70	37	73	38
28	61	54	70	48	70	50	69	49	77	54	80	40	58	47	64	50	72	46	78	48	74	38	72	41	77	40	75	43
29	55	37	60	40	64	47	66	47	70	54	79	57	66	40	50	38	61	38	64	37	67	37	74	42	72	45	66	45
30	63	35	42	32	49	42	51	45	54	46	67	45	44	37	43	33	43	34	40	34	41	38	44	39	55	40	45	35
31	68	38	47	33	52	38	53	40	49	44	47	41	40	36	35	35	43	37	40	33	43	37	47	37	44	36	40	33
Mns	56.2	37.4	61.2	34.5	61.5	41.6	57.7	43.4	60.1	46.8	68.4	44.4	53.5	38.7	49.9	32.8	56.3	37.8	55.0	38.7	54.5	36.8	57.2	38.5	64.3	46.6	62.2	39.9

Date.	Michigan, Lower Peninsula.						Ohio.						New York.						Vermont.									
	Detroit.		Muskegon.		Saginaw, W. S.		Cleveland.		Lima.		Sandusky.		Toledo.		Erie, Pa.		Buffalo.		Canton.		Rochester.		Syracuse.		Burlington.		Northfield.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	59	46	58	47	60	45	74	46	78	60	71	48	60	48	59	45	58	46	59	47	57	46	56	44	58	39	59	38
2	57	42	48	44	56	40	79	45	78	56	77	48	65	46	80	47	68	42	59	51	64	46	74	49	60	47	60	43
3	50	38	52	38	50	38	45	42	68	42	48	44	52	39	49	41	51	42	51	40	55	42	63	42	57	38	52	37
4	54	38	50	33	53	31	48	41	55	33	53	41	54	36	51	37	52	37	48	36	53	39	51	36	45	36	46	34
5	55	37	51	34	58	30	47	40	55	31	53	41	57	37	50	37	51	36	54	35	54	34	51	36	50	34	47	29
6	63	39	57	33	67	32	52	36	60	43	58	40	61	41	54	37	46	39	57	30	59	36	55	46	56	30	53	25
7	64	50	61	42	70	37	61	41	58	40	58	44	59	48	61	43	59	44	64	43	67	44	67	46	66	42	64	34
8	62	48	61	49	65	48	66	54	62	51	65	54	65	50	62	51	64	49	70	45	66	46	62	48	69	43	69	36
9	67	44	61	42	70	45	62	51	68	47	66	48	69	46	58	50	59	44	62	48	62	48	62	50	66	50	61	51
10	68	46	61	39	65	42	63	48	70	46	68	46	69	49	65	43	54	42	59	40	62	41	62	42	61	44	60	45
11	59	39	54	40	60	35	57	44	63	45	59	45	60	45	56	42	50	42	53	41	54	39	53	40	53	41	54	39
12	57	38	52	32	58	31	50	40	56	35	56	43	58	38	49	38	47	35	53	35	54	36	52	36	56	40	56	34
13	46	36	47	36	48	32	48	39	51	32	48	41	46	36	47	37	48	37	49	37	49	36	49	34	50	38	53	30
14	52	32	60	30	59	29	45	39	61	32	52	39	52	34	48	39	47	39	46	38	50	40	48	36	53	40	59	39
15	58	42	61	35	65	33	52	36	66	44	54	38	56	39	53	38	57	42	60	37	57	42	56	39	57	39	56	31
16	66	44	68	46	67	39	67	43	64	51	69	43	68	44	65	45	70	43	68	3								

Climatological Data for May, 1910.
DISTRICT No. 5, UPPER MISSISSIPPI VALLEY.

GEORGE M. CHAPPEL, District Editor.

TEMPERATURE.

The weather during the month of May was abnormally cool over the whole of the upper Mississippi Valley, and over the northern half of the district it was unusually dry. A cool May in this section of the country is usually accompanied by an excess of precipitation, but during the past month there was a deficiency of moisture, except over southern Iowa, Missouri, most of Illinois, and the small part of Indiana within this district. Also, contrary to the usual conditions for that time of the year, there were no very warm days; the temperature being below the normal nearly every day of the month and at every station in the district. Freezing temperatures were of frequent occurrence over the northern half of the district during the first 14 days, and minimum temperatures, near or below the freezing point, occurred on several days during the latter half of the month over North Dakota, Minnesota, and Wisconsin. The number of days on which the maximum temperature was above 80° was very small in all sections and in no section was the monthly maximum as high as it was in April. In fact the month was characterized by uniformly low temperature, the coldest periods being from the 1st to the 5th and the 11th to the 14th, and the warmest from the 18th to the 20th and the 27th to the 29th.

The mean temperature for the district, as shown by the records of 294 stations, was 54.0°, which is 4.0° below the normal. The highest monthly mean was 63.9° at Cairo, Ill., and the lowest 45.4° at Vudessare, Wis. The highest temperature recorded was 89° at Mount Pleasant, Iowa, on the 21st, and at Sublett, Mo., on the 28th, and the lowest, 10° at Hannah, N. Dak., on the 12th.

PRECIPITATION.

The first half of the month was extremely dry over central and northern Iowa, Wisconsin, Minnesota, and North Dakota, but there were frequent and well-distributed showers during that period over the southern sections of the district. The precipitation during the latter half of the month was general and quite well distributed over all sections, but the monthly amounts were decidedly below the normal, except in southern Iowa, Missouri, Illinois, and Indiana.

In North Dakota there was less than one-half of the normal, but it was fairly well distributed throughout the section and nearly all of it fell between the 14th and 23d, inclusive, but scattered showers occurred on the 1st and the last 4 days of the month. The heaviest precipitation occurred in Walsh and the least in Grand Forks County. There was an average of .01 inch of snowfall.

In Minnesota there was less than one-half of the average for May, and also of May, 1909. The monthly amounts ranged from over 3 inches in eastern Mower, Redwood, and north-eastern Roseau counties to less than 1 inch in a number of western and a few central counties. The deficiency of precipitation was general and ranged from less than 1 inch in the extreme northwestern counties to more than 3 inches in Faribault and Houston counties. In the central counties the deficiency was generally over 2 inches. Scarcely any rain fell during the first 14 days of the month, and as a result of the drought, disastrous forest fires prevailed in some of the northeastern counties from early in the month to the 15th, 16th, and 17th, when the drought was broken by nearly general rain.

In Wisconsin there was practically no rain during the first 15 days, but from the 16th to the end of the month frequent and fairly abundant showers occurred at most stations, but the average of the monthly amounts was 1.59 inch below the normal.

In Iowa showers were well distributed throughout the month, but the amounts of rainfall were abnormally light over the northern half of the State during the first 15 days, and were only slightly above the normal over the southern counties. The only portion of the section in which there was a slight monthly excess was the 3 southern tiers of counties.

While North Dakota, Minnesota, Wisconsin, northern Iowa, and northern Illinois were suffering for moisture during the first half of the month, Missouri, central and southern Illinois, and the northwestern part of Indiana were receiving the normal amount or an excess of precipitation. The southern sections of the district received an abundance of moisture during the entire month. The showers were well distributed as to time and locality and in no case was the daily amount extraordinarily heavy, the heaviest being 3.20 inches at La Harpe, Ill., on the 2d.

In Missouri, showers with appreciable amounts of precipitation occurred on 24 days, and more or less general and heavy rains fell on 15 days of the month, the greatest daily amount being 2.32 inches at Steffenville on the 11th.

The greatest daily amount recorded in Indiana was 2.70 inches at Collegeville on the 29th, but amounts in excess of 1 inch were recorded at all stations in the section.

The average rainfall for Illinois was 5.23 inches which is 1 inch above the normal. The greatest monthly amount was 8.65 inches at Morrisonville, and the least 2.32 inches at Dakota. At Cairo, 0.65 inch of rain fell in 35 minutes, between 1:26 a. m. and 2 a. m., and 0.84 inch in 50 minutes between 5:32 a. m. and 6:18 a. m., on the 24th. The average number of rainy days for the State was 12; clear days, 13; partly cloudy, 8; and cloudy, 10.

The average precipitation for the district, as shown by the records of 300 stations, was 3.06 inches, which is 0.72 inch below the normal. The greatest amount, 9.85 inches, occurred at Sublett, Mo., and the least, 0.39 inch, at Beardsley, Wis. A measureable amount of snow fell at 5 stations in the district, the heaviest being 2.0 inches at Crosby, N. Dak. All the snow reported was from North Dakota, Minnesota, and Wisconsin, with a trace at 1 station in Illinois.

SUNSHINE AND CLOUDINESS.

The average number of clear days was 14; partly cloudy, 8; and cloudy, 9. The duration of sunshine was very nearly the normal, being slightly below in southern and slightly above in the northern sections.

WIND.

Northwest winds prevailed. The highest velocity reported was 46 miles per hour, from the west, at Devils Lake, N. Dak., on the 28th.

MISCELLANEOUS.

On account of the extremely dry weather over Minnesota and Wisconsin during the first half of the month, extensive forest fires occurred in the northern part of those States.

Mr. U. G. Purssell, Section Director at Minneapolis, Minn., reports:

Scarcely any rain fell during the first 14 days of the month, and as a result of the drought, disastrous forest fires prevailed in some of the north-eastern counties from early in the month to the 15th, 16th, and 17th, when the drought was broken by nearly general rain which quenched the fires. Vast tracts of standing timber were destroyed, as were also a large number of logs, poles, and ties.

Heavy frosts, and over the northern sections freezing temperatures during the early part of the month, did little or no damage as practically all the fruit and tender vegetation had been killed by frosts and freezing temperatures during the month.

of April, but the continued cold weather prevented the germination of corn and the normal growth of all farm crops and other forms of vegetation. Much more than the usual amount of corn was replanted and still the stand is below the average. The poor stand is, however, largely due to the fact that nearly all of the seed corn was injured by the severe freezing weather which passed over this district on the 12th and 13th of October last.

Continued cool weather also favored the propagation of cut and wire worms, and these insects are doing much more than the usual amount of injury to the young corn plants. The foliage of shade and fruit trees was about as far advanced at the close of the month over the central portions of the district as it was before the freeze, April 15.

The droughty conditions which prevailed over a large part of the district during the first half of the month reduced the prospects of an average hay crop. Grass in meadows and pastures is short from Iowa northward to the Canadian border.

The number of thunderstorms and wind squalls was less than usual during May.

The only severe storm within the district occurred at Cairo, Ill., on the evening of the 22d. Mr. W. E. Barron, Local Forecaster, reports regarding the storm as follows:

A thunderstorm occurred in the afternoon and early evening of the 22d that developed into a severe local storm in the western portion of the city of Cairo, with some of the characteristics of a tornado. One cottage was overturned, 5 others were shifted from their foundations and 1 lost its roof, besides minor damage to buildings, sheds, and trees. No lives were lost. From the time of the first thunder at 2:53 p. m., there had been low rumblings to the south and southwest. Light rain fell at intervals beginning at 1:11 p. m. From 6:15 p. m. to 6:20 p. m., there was a sharp downpour, accompanied by sharp lightning and thunder. The clouds at the p. m. observation were recorded as 10 nimbus, direction east, but before the observer descended from the roof a peculiarly threatening cloud with jagged edges was approaching from the southeast, with a green color underneath and apparently behind it. The wind shifted at 6:46 p. m. from the northeast, velocity 13 miles, to southeast and reached a maximum of 31 miles per hour at 6:52 p. m. There was considerable sharp lightning and thunder. A clock in a house that was overturned stopped at 6:55 p. m. The last thunder was heard about 7:15 p. m., but the rain continued until about 8:10 p. m., though not at a heavy rate; the total amount to that time being 0.44 inch. The barometer had fallen steadily since 8 a. m., and fluctuated slightly from 6:45 p. m. to 8 p. m., but did not reach its lowest point until about 10:30 p. m., though the recorded height, 29.61, reduced to sea level, was the lowest reading for the month. The temperature dropped from 70° to 64° within a very few minutes after the evening reading had been made.

The first evidence of a hard wind was shown at the corner of Twenty-fourth street and Commercial avenue, where a telegraph pole was broken off near the ground. From this point the path of the storm was irregularly west-northwestward to the Mississippi River. While most of the debris was displaced in line with the apparent path of the storm, there are several places where a movement toward it was shown.

The first serious damage was to a dwelling house at 3005 Elm street—the southeast front end of which was moved 8 inches to the northwest, breaking the 4-inch brick foundation wall on both sides. About 100 feet west a large cottonwood tree was torn up, partly by the roots and partly broken across the 24-foot butt, which was carried about 8 feet from its original place; the direction taken was toward the southwest. A number of buildings were passed over in the next 4 blocks of its path, and the damage there was slight. Peculiar wind movements were noted at 3108 Washington avenue, where small articles were carried from the northeast and southwest sides of the house, then back toward it. At 3115 Washington avenue, the north corner post of a front porch was taken out and the boardwalk leading from the house to the street was picked up and carried some distance west.

The house that was overturned was located at 720 Thirty-fifth street. The front southeast end was carried about 35 feet to the southwest, the rear a shorter distance. It rests on one side of the roof, while the other side is opened out on the ground like the cover of a book. Not one of the seven people in the house at the time was much injured. Just beyond this, the house at 725 Thirty-sixth street was moved from its foundations, the rear, southeast end being carried 20 feet to the southwest; the other end but 2 feet. The front, northwest end of a cottage separated from this one by 2 20-foot lots was shifted a few inches to the northeast, while a large locust tree in the street immediately in front of it was blown directly west. Across Thirty-sixth street, at No. 728, a front porch roof was lifted and let down again on the posts, which were somewhat displaced. The next house, No. 732 Thirty-sixth street, was not only shifted from the brick piers on which it rested, but the roof was torn off and the pieces scattered to the west, some of them fully 800 and 1,000 feet over the Cairo and Thebes Railroad embank-

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ment—New levee—to near the Mississippi levee. The next house in line was a light frame structure about 300 feet farther west and across the tracks of the Big Four Railway. It was moved about 8 feet toward the south. Trees near the corner of Thirty-seventh street and the Big Four Railway were also moved toward the south. All of the houses moved by the storm were 1-story frame cottages, resting on nothing heavier than brick piers or 4-inch brick foundations. A large shed used as a workshop, near the corner of Thirty-eighth street and Highland avenue, was blown flat toward the south.

The crew of the steamer *Barrett* reported that the water in the Mississippi River was whirled into the air a short distance ahead of them as they came down stream. No report of the further progress of the storm has been received.

The clouds are described differently by various witnesses, depending on their view points. Mr. D. K. Brown, living at the corner of Thirty-third street and Highland avenue, describes the cloud as coming from the southeast, hanging low, the edges as jagged like the teeth of a saw. Mr. J. W. Williams saw the storm from his residence, 628 Thirty-fourth street, so marked, and stated that a second cloud from the north or northeast met the cloud above described almost due east of his position, apparently over the Ohio River, about three-fourths mile distant. After the 2 clouds came together there was a whirling and a bounding motion; leaves, etc., were carried up; but he noticed no funnel-shaped cloud. He said the motion of the whirl was opposite the hands of a watch. His statement of the 2 clouds meeting is corroborated by other witnesses. Mr. William Booth, of 3409 Washington avenue, watched the storm from the second floor of a building at the corner of Thirtieth and Sycamore streets, which he said was shaken by the wind. He states that the 2 clouds came together and formed a funnel near the first house that was seriously damaged, southwest of his position. The funnel was black and there was a light pink glow above it. After lowering the trees near the corner of Thirty-first and Elm streets, it bounded up and seemed to roll like the wheel of a wagon in a westerly direction, then dropped down again somewhere beyond Thirty-fourth street. He observed no lightning from the funnel cloud and there was no hail. Another witness living at 708 Thirty-sixth street, about 250 feet to the right of the storm's path, also noticed the whirling funnel-shaped cloud and states that it did not touch the ground until it reached Thirty-sixth street; all kinds of leaves, trash, etc., were carried up by it. One witness compares the noise of the storm to the sound of bees swarming, another to the roar of a heavily loaded train, while a third said it seemed to him only the sound of the swaying of trees.

The point where the funnel cloud is described as forming is about 4,500 feet west-northwest of the Weather Bureau station, and the distance from that point to the Mississippi River is about 3,500 feet. Out of this, the track of material damage is about 700 feet. At Thirty-sixth street its width appears to have been 75 feet.

STAGE OF RIVERS.

The stages of the rivers were below the normal in the northern section of the district, but in the southern section many of the streams were up to the flood stage at some time during the month.

Wisconsin.—The rivers throughout this section were low, although the general rains during the last 15 days raised them somewhat.—*H. B. Hersey, Inspector.*

Illinois.—The Illinois River was above the flood stage at La Salle from the 2d to the 13th and the 26th to the 31st. It was above the flood stage at Peoria nearly all the month. At La Salle the highest stage was 21.0 feet on the 4th, and at Peoria, 15.6 feet on the 8th. At Beardstown the river was constantly above the flood stage from the 10th to the close of the month. Farm operations were delayed on some of the bottom lands of the Illinois River. At Chester the maximum stage of the Mississippi River was 22.2 feet on the 11th and the lowest, 9.4 feet, on the 2d.—*William G. Burns, Section Director.*

Dubuque, Iowa.—The rivers were low for May throughout the district. The Mississippi at Prairie Du Chein was below a 4-foot stage from the 15th to the 25th, inclusive, while at Dubuque it reached a 4-foot stage on the 20th and 21st, or the lowest during May in 8 years. It has been lower at Dubuque only 4 times during May in 37 years. The Wisconsin was under a 3-foot stage during most of the month at Grand Rapids and Muscoda. General rains during the last 10 days of the month slightly raised the Mississippi.—*J. H. Spencer, Local Forecaster.*

Keokuk, Iowa.—Notwithstanding the abundant rains, the Mississippi River is much below the average stage for the season.—*Fred Z. Gosewisch, Observer.*

The stage of Des Moines River at Des Moines ranged from 2.1 feet on the 8th to 2.9 feet on the 24th and 25th, falling again to 2.5 feet by the end of the month. This is much below the May normal.

The Maquoketa River, Iowa, was above the flood stage for a short time on the night of the 21st-22d, due to a severe local storm in the western part of Dubuque and eastern Delaware counties. The Dyersville Commercial of May 27 says:

The rainstorm came up from the northwest shortly after 7 o'clock, and from a drizzling shower, developed into a veritable cloudburst, the water coming down in torrents, continuing for several hours. The Maquoketa gradually assumed a flooded condition and overflowed its banks. The river continued to rise until about 2 o'clock Sunday morning. Much damage was done to county bridges and culverts, many of the latter being entirely washed out. The south abutment of the Black Bridge in North Dyersville was badly undermined and may have to be rebuilt. The washing out of a portion of the approach necessitated temporary repairs before it was passable. The bridge that spans Bear Creek south of town was also slightly undermined. There are also numerous bridges in other localities that are in bad shape. Reports are to the effect that the vicinity of Richardsville suffered the most damage, and that the rain there was the most severe. Fences were washed out and fields so badly washed that replanting will be necessary in many instances.

DRAINAGE AND ENGINEERING NOTES.

During the month of May the United States Army Engineers, who are surveying the Des Moines River under the supervision of Mr. A. O. Rouse, completed the transit and level lines for base of survey, and also made topographic survey on both sides of the river covering the area subject to overflow. Soundings and probings of the river bottom and levels to determine water slope were also taken for 8 miles below Des Moines.

Mr. H. A. Kipp, Engineer, Drainage Investigations of the United States Department of Agriculture, in charge of a party of engineers, began work in southern Iowa during the month. A survey will be made of a river basin in that part of the State and plans will be made for its drainage.

The following interview with Mr. C. G. Elliott, Chief of Drainage Investigations of the United States Department of Agriculture, was recently published in the Des Moines Register and Leader:

In my department we simply make surveys and then recommend improvements. In Iowa, the drainage problem is taken care of by established districts. Each district works independently of the others and the cost of the drainage improvement is taxed to those who are benefited. Oftentimes the work is not done as it should be, or the drainage operations of 2 districts conflict with each other. In some cases the rivers are not deep enough to carry away the water, causing overflows. We find many other conditions that might be improved. It is the purpose of the drainage investigating commission to aid the farmers as much as possible and to give suggestions as to the best methods of draining the land.

Iowa has done more drainage work during the past year than any other State in the Union. The farmers are also showing the best judgment in their methods of draining. It is much more economical in the long run to use large tile under the surface than to adopt the less expensive method of open ditches. Ditches take up a large amount of good land and considerable expense is involved in cleaning them out, and they are also very inconvenient to the farmer working in the field. The Department of Agriculture does everything in its power to get the farmer to see the advantages of tile draining.

In our investigations in Iowa we will not be able to survey the State thoroughly. Three or four typical river valleys will be covered and reports made accordingly. We will make our recommendations to the members of the state commission. They, in turn, will report to the legislature, and that body will make suitable changes in the drainage laws.

Prof. W. H. Stevenson, Ames, Iowa, secretary of the Iowa State Drainage Association, has issued the report of the 1910 annual meeting of the association in a pamphlet of over 100 pages. The report contains many papers, addresses, and discussions of value to those interested in the drainage of farm lands. Professor Marston's address on "Tile Drainage Engineering" gives much valuable information to land owners and drainage engineers. The following subjects were also covered at the meeting by addresses and discussions: Uniformity of Contracts and Specifications for Drainage Work, Data to be

contained in a Parliamentary Drainage Report, Surface Water Inlet into Ditches, Public Drainage in Iowa, Its Hindrances and Needs, and many others which are just as interesting and valuable.

THE RECLAMATION OF MINNESOTA'S WASTE LANDS.

By GEORGE A. RALPH, State Drainage Engineer.

Minnesota's greatest resource, her greatest heritage, is her vast wealth of productive soil. The forest wealth of the State is growing less from year to year; her vast deposits of iron ore will in time become exhausted, but the producing power of her fertile soil will, with proper husbandry, last for all time.

Minnesota is situated in the geographic center of North America. Her surface lies in three great continental watersheds. The waters from about two-thirds of the State flow southward through the Mississippi and into the Gulf of Mexico. The northeastern portion of the State drains eastward into Lake Superior and through the Great Lakes to the Gulf of St. Lawrence. The north and northwestern parts of the State drain into Red River of the North and Rainy River and flow northward, emptying in Hudson Bay.

The altitude of the State ranges from about 700 to 1,600 feet above the sea, the average altitude being about 1,200 feet. Her surface is of a generally rolling character, with some large stretches of level meadow and marsh land.

The State is well supplied with natural water courses, and surface slopes are generally very favorable for cheap and effective drainage.

The following statement gives the fall in feet of the most important streams of the State:

	Feet.
Mississippi River, from source to southern boundary of Minnesota.....	858
St. Louis River, from source to Lake Superior.....	1,000
Rainy River, source to Lake of the Woods.....	540
Red River, source to Canadian boundary.....	750
Minnesota River, source to Mississippi.....	300
St. Croix River, source to Mississippi.....	300

A surface slope of 6, 8, and even 10 feet to the mile is not uncommon on wet land areas. In its natural condition more than one-fifth of the State was too wet for agricultural purposes. These wet land areas are fast disappearing—millions of dollars have been expended in the construction of drainage ditches and in the improvement of streams.

The greatest system of storage reservoirs to be found in the American Continent has been constructed at the headwaters of the Mississippi River. The reservoirs were created for the purpose of controlling flood waters and regulating the flow of the Mississippi River.

Minnesota has more than 7,000 meandered lakes. More than can be found in any other 10 States of the Union; nearly 4,000,000 of her total area of 53,900,000 acres are lake surface. In natural scenery the State is surpassed by few of the States of the Union—Minnehaha Falls, St. Anthony Falls, Minneopa Falls, The Dalles of St. Croix, Granite Falls, Zumbro Falls, Redwood Falls, Koochiching Falls, and the Falls of the St. Louis River are all famous for their magnificence and grandeur, and annually attract thousands of tourists.

Minnesota, though generally known as a prairie State, contained in its original state extensive forests of very valuable timber, and for more than 50 years the manufacture of lumber has been one of her principal industries. There are 31 different kinds of woods in her forests from which lumber is manufactured, including the finest quality white pine, oak, black walnut, cherry, ash, birch, butternut, spruce, and red cedar.

Minnesota's water resources are among her greatest natural assets; water powers amounting to 250,000 horsepower have already been developed on her streams, and when the available water power of the State has been developed to its fullest extent it will reach at least 500,000 horsepower.

The average annual rainfall of the State for several years has been approximately 27.8 inches, the range being from 24 to 33 inches. The greater portion of this rainfall comes in the summer months, just when it is needed for growing crops. The average precipitation for June is from 5 to 6 inches, while the average for December, January, and February is about 1 inch each.

A very large proportion of the land area of Minnesota contains very fertile soil. The famous Red River Valley, which extends some 200 miles along the western boundary of the State, and is from 20 to 30 miles wide along the Minnesota side of the river, has a wonderfully productive soil. The Minnesota Valley is equally productive. Analysis and soil tests made by the Department of Agriculture, Washington, D. C., place Minnesota soils in the first rank. A statement showing the comparative value of samples of the best soils selected from 45 different localities, covering nearly every State in the Union, gives Minnesota soils a higher percentage of plant food than those of any other locality.

Minnesota in her natural condition had large areas of wet lands, nearly one-fifth of her total area being too wet for agricultural purposes, but a wonderful transformation of her land surface has been brought about during the past 15 years. Millions of acres of wet land have been reclaimed by the construction of drainage ditches; as a result, the swamp land area of the State is diminishing at the present time at the rate of nearly a million acres annually. One large drainage project in the northwestern part of the State, now being worked out, will reclaim 400,000 acres; another 150,000, and a third, in the northeastern part of the State, nearly 100,000 acres. In fact, drainage work is being carried on wherever wet land is found. This reclaimed land is the most productive of the State, and in time will command the highest prices.

There are, at the present time, about 2,000,000 acres of government land in this State subject to entry under the land laws of the United States, nearly 100,000 acres of which is contained in the area to be drained by the big drainage project in eastern Marshall County.

The State owns about 3,000,000 acres of school and swamp land and offers for sale annually from 100,000 to 250,000 acres. These lands are sold at public auction, the minimum price being \$5 per acre. A payment of 15 per cent of the purchase price is required at the time of purchase. The balance may run for 40 years at 4 per cent interest.

The transportation facilities of Minnesota give her a great advantage. Four great transcontinental lines of railway cross the State; the total number of miles of railway within the State being a little over 8,000. Lake Superior extends nearly one-third of the distance across the State, and in volume of tonnage the harbor of Duluth is the greatest in the world.

Minnesota's iron mines are another of the State's great natural resources. These mines, though they have only been in operation for a few years, are proving to be very rich and of great magnitude. There are 3 different ranges from which ore is now being mined—the Vermillion, the Mesabi, and the Cuyuna. The extent of these ore beds has not been definitely determined; sufficient is known, however, of their greatness to warrant the statement that upward of 1,500,000,000 tons of high grade iron ore is contained in the iron mines of Minnesota. The output for the past year was nearly 30,000,000 tons.

The great areas of swamp and marsh land of the State are fast becoming the great wealth producing areas.

Statistics of drainage work carried on under county management in the several counties of the State show that approximately 7,000 miles of drainage ditches have been constructed in the several counties through this channel. These ditches drain and reclaim about 4,000,000 acres of wet land, and \$8,850,000 has been expended carrying out the work. Polk County alone has constructed 592 miles of ditches, which drain

972,341 acres at a cost of \$755,760.12. Marshall County will, when her big Mud Lake drainage project is completed, have 797.75 miles of ditches, which will reclaim 771,436.33 acres at a cost of \$993,246.43. Clay County has constructed 189 miles of ditches at a cost of \$320,708, and drained 261,717 acres of wet land; Wilkin County, 188 miles which drain 196,183.6 acres at a cost of \$263,290.36; Brown County, 227.2 miles of ditches which drain 18,572 acres and cost \$274,756.62, the greater portion of the Brown County ditches being tile drains.

Every county in the State, with the exception of Cass, Fillmore, Houston, Rock, Pipestone, Mower, St. Louis, Koochiching, Lake, and Cook, is engaged in reclaiming its wet land areas.

Besides the work carried on under county management, a very large amount of drainage work is now being done by the State Drainage Commission. Up to the present time, and including the work under way, there have been constructed under this management 1,069 miles of drainage ditches, which have reclaimed about 1,079,700 acres of land at a total cost of \$1,324,800.

The total amount expended in the construction of public ditches in the State of Minnesota, through all channels, is, therefore, \$10,174,800. The total number of miles being 8,069, the total area reclaimed is approximately 5,079,700 acres.

As a result of the extensive drainage work thus being carried on, drainage contractors from all parts of the United States have been attracted to Minnesota to bid on ditch work, and notwithstanding the fact that prices for labor and commodities of all kinds have been steadily advancing during the past 10 years, the price paid for drainage work has kept steadily going down; the work was let last season for 5.7 cents per cubic yard, the lowest price ever reached in any western State.

The work carried on by the State Drainage Commission has been not only an incentive for county work, but has also acted as the regulator or balance wheel on cost of doing the work. The work carried on by the State has always been conducted more economically than under county management.

The contracts for State work have been let at uniformly low figures, and wherever the State has cooperated with the county authorities in letting ditches, very low prices have been secured. Nicollet County cooperative ditch was let for 6.7 cents per yard. Twelve cents per yard was the prevailing price for ditch work in this county prior to this time. The big Steele County ditch was estimated by the county authorities to cost \$72,000. By cooperating with the State Drainage Commission the work was let for 5.9 cents per yard, or a total of \$36,000. Kandiyohi County, by cooperating with the State Drainage Commission, let a contract for Judicial Ditch No. 1 for 6.2 cents per cubic yard. Had this work been let at the prices that prevailed for county work it would have cost the taxpayers \$36,000 more than it did.

Great improvements have been made during the past 10 years in ditching machinery. Ditching machines designed to dig any kind of a ditch can now be procured—machines that will excavate ordinary ditches at a cost of from 2.5 to 4 cents per cubic yard.

The great activity in drainage work all over the State is in a large measure attributable to the State's excellent drainage laws, which are both equitable and practical. It would be hard to prepare a drainage law that would be more applicable to the various conditions met with in carrying out drainage work throughout the State and which would give more satisfactory results than our judicial ditch law. It is the result of much hard work on the part of some of the best lawyers, most practical business men, and best drainage engineers of the State.

The law under which the Drainage Commission constructs ditches is a very practical one. In the construction of 50 state ditches under this law there is but one instance where an appeal has been taken. This case is now pending and will probably be settled to the satisfaction of all concerned without a trial court.

The Federal drainage law, known as the Volstead Act, authorizes the taxing of all wet lands owned or controlled by the Federal Government for the construction of drainage ditches. This, I am informed, is the first law enacted by Congress authorizing the assessment of special taxes against government lands. It is the first instance where the Federal Government has made provisions for the payment of the cost of constructing drainage ditches. Under the terms of the Volstead Act the citizens of the counties of the State in which government lands are situated may proceed to drain these lands, tax the cost of doing the work up to all lands benefited in proportion to the benefits received, and when the taxes become due they are authorized to place these lands on the market, sell them, and reimburse the county out of the proceeds of the sale, the only condition being that the Government shall be paid \$1.25 per acre, and that the purchaser shall be a qualified entryman under the land laws of the United States. Estimating the cost of drainage at \$2 per acre, the amount to be realized when lands are offered for sale, in order to make the county and government whole, would be \$3.25 per acre. The poorest lands in northern Minnesota, when properly drained, should sell readily at from \$8 to \$10 per acre.

With the excellent drainage laws now on our statute books the people of northern Minnesota can reclaim and place on the market all lands that will be benefited by drainage. A petition signed by one or more interested landholders starts the machinery in motion for a drainage system costing thousands of dollars, and if the proposed ditch will be of greater benefit than the cost of construction, will be of public utility and promote the public health, it is mandatory upon the court to order the ditch.

A very important feature of the drainage work now being done by the State Drainage Commission and much of the work done under the county management is the public highways constructed in connection therewith. Nearly every mile of ditch has a graded road along the bank thereof. The contracts for 464 miles of State ditches now under construction by the State Drainage Commission, include 367 miles of good roads which will be constructed along the banks thereof. These roads will be the very best roads of the country and will render all lands drained easily accessible. These roads are built from the dirt excavated from the ditch. The average cost per mile for levelling off the dirt and making it suitable for a highway is about \$75.

The big Mud Lake drainage project now under construction by Marshall County will include over 400 miles of graded roads along the banks of the ditch.

Northern Minnesota counties have it within their power to lay out and construct ditches and highways across their swamp land areas and a very large proportion of the cost of doing the same can be taxed up to the government and state lands. The people of southern Minnesota fully appreciate the great benefits to be derived from proper drainage and are not only putting in open ditches for outlet drains wherever necessary, but a large amount of tile drainage work has been carried on all over southern Minnesota. Tile factories in different parts of the State are taxed to their utmost capacity to supply the demand for tile. As a result of this drainage work, farm land values are steadily going up, and in a very short time a good farm in southern Minnesota will command as high a price as the best Illinois farms.

What is accomplished by drainage in southern Minnesota can be accomplished in northern Minnesota. Prof. Thomas Shaw, one of the most eminent agriculturists in America, says that northern Minnesota possesses advantages as a stock-raising country unequaled elsewhere in the world. In the summer of 1906 I collected samples of the swamp soil from different localities in the northern part of the State and had the same analyzed by the Department of Agriculture, Washington, D. C., The

results of these analyses showed a quick, responsive soil with a high content of all elements necessary for successful plant growth.

State Ditches 69, 72, and 91 in Roseau County, which are now being constructed, will be completed during the season of 1910. These ditches will make suitable for cultivation 140,000 acres of rich prairie and meadow land.

State Ditches 88 and 89, and Judicial Ditch No. 1, Itasca, Aitkin, and St. Louis counties will be completed this season. These ditches drain approximately 60,000 acres of rich swamp and marsh land, which can be easily cultivated and made suitable for growing crops.

The State Legislature, at its last session, authorized the State Drainage Commission to make surveys of the water resources of the State. The Drainage Commission, in cooperation with the United States Geological Survey, is now making surveys and stream measurements of all the important streams of the State. These surveys, when completed, will not only show the available water power of the State, but will also show all feasible sites for storage reservoirs. A report covering the work will be submitted to the next state legislature.

The results obtained from these surveys up to the present time would indicate that it is entirely feasible to construct storage reservoirs on some of the most important streams of the State, in addition to those already constructed, and that sufficient water can be stored therein to not only prevent in a large measure damages from floods, but serve to equalize the flow of the streams of the State, so as to largely increase the value of all water powers now developed or which may hereafter be developed.

The State Drainage Commission was also authorized by the legislature to make topographic surveys of the various watersheds of the State for the purpose of securing data from which proper drainage plans might be prepared, and when these surveys are completed, to prepare and file with the county auditors of the State complete drainage plans for the several counties, such plans to be adopted by the county in all future drainage work. Topographic surveys are now being made by the State Drainage Commission, in cooperation with the United States Geological Survey, Washington, D. C. These surveys, owing to the very thorough manner in which they are executed, will require several years time to cover the State. It is expected that surveys covering about 6 counties will be completed by the close of the year 1910. Topographic surveys covering nearly all the northern part of the State, and considerable territory around the Twin Cities, have already been made. Reports of these surveys will be ready for distribution from time to time as the work progresses. Reports of the Water Resources survey will be ready for distribution, in a limited number, after January 1, 1911. One-half of the cost of these surveys is borne by the Federal Government.

RELATION OF DEFORESTATION TO PRECIPITATION AND RUN-OFF IN WISCONSIN.¹

By WILLIAM C. DEVEREAUX, Local Forecaster, Milwaukee, Wis. Dated June 3, 1910.

INTRODUCTION.

The great importance of the natural resources of Wisconsin is beginning to be fully appreciated, and the problem of the conservation of those resources is receiving much attention by the State authorities. In the early days most of the surface was covered with a magnificent forest which yielded a large revenue, and there is still a considerable amount of timber, especially in the northern section. The rivers have sufficient fall, and, at present, sufficient water to furnish a great amount of power for manufacturing and other industries. Millions of dollars have already been spent in developing the water power, and much more will be spent in the future for the same purpose. It is of

¹ Printed by order of the Chief of Bureau.

vital importance to the welfare of the State, and especially to present and future users of water power, to determine what effect, if any, deforestation has had, or will have, upon the rainfall and the stream flow. A man who has used the water power on the Wolf River for many years recently stated that the stream flow in that river had decreased nearly one-half during his memory. Such a statement, made by a person of high standing in the community, is very important if true, but if not true, like many other careless statements, is very injurious. This man probably had in mind the stream flow during some exceptionally wet season in the past and was comparing it with a recent dry season.

Prof. Willis L. Moore, Chief of the U. S. Weather Bureau, recently issued a masterly treatise on "The Influence of Forests on Climate and Floods," which has corrected many erroneous impressions. As Professor Moore well says: "Let logic, reason, and investigation have time to operate, for any man may be honestly mistaken and draw general conclusions from inconsequential details or deceive himself by the improper grouping of data." It is proposed here to consider some of the different phases of the question as applied to Wisconsin. The discussion will be limited mostly to the Wisconsin River Valley above Portage and the Wolf River Valley above New London, as they are the two largest and most important valleys in the State and are fairly well covered by long and reliable records.

TOPOGRAPHY AND SOIL.

The northern part of the State consists of a plateau of moderately high and rolling country, the highest points being about 1,900 feet above sea level and about 1,300 feet above Lake Michigan. The central section is considerably lower and less rolling than the northern. Both the Wisconsin and the Wolf rivers rise in the highlands near the Michigan line and flow in southerly directions. The Wisconsin falls at the rate of 1.2 foot per mile for the first 70 miles, 4.4 feet for the next 150 miles, and 1.5 foot for 90 miles (6 miles of which is through the narrow gorge of the Dells) to Portage. At the headwaters there are many ridges and potholes in the glacial drift forming numerous small lakes and swamps. The Wolf River falls at the rate of 9.7 feet per mile for 80 miles to Shawano, then reaching the old shore line of Lake Michigan, its slope is only one-eleventh as great, or 38 feet in 45 miles, to New London.

The soil in northern Wisconsin varies considerably in character and ranges through various grades of sand and clay, being mostly open enough to take up water, and underlaid usually at no great depth by crystalline rocks, which prevent further seepage. In the extreme upper Wisconsin Valley the loam drift is generally thicker than in the region southward, although at places the rocks come to the surface.

ORIGINAL FOREST.

Less than a century ago the whole northern part of Wisconsin was a vast forest, consisting of both conifers and hardwoods. Some of the white pine stands are said to have contained the best pine in the country. In the Wisconsin Basin the southern part of Wood and Portage counties was comparatively open, containing large marshes and oak openings, but north of this region there was the mixed pine, hemlock, and hardwood forest, with strips of pine along the rivers. The headwaters of the Wisconsin River were mostly occupied by pine, with numerous cedar and tamarack swamps. There was a large admixture of Norway pine in the southern Wolf region, while in the northern part of the valley, pine and hemlock were scattered through the nearly solid hardwood forest of birch, basswood, rock elm, ash, and maple. The frequent swamps contained white cedar and tamarack, with spruce on the edges, and south of Shawano there was a considerable tract of poor land bearing jack pine.

CLEARING THE FORESTS.

In the Wisconsin River Valley lumbering began in the early 40's, Wausau having a population of 350 in 1847, and the whole

upper Wisconsin Valley about 1,000 people. A sawmill was built at Grand Rapids in 1846. The first lumber was rafted down to the Mississippi River, but a better outlet was opened by the Wisconsin Central Railroad, extending into Portage County in 1871. The Chicago, Milwaukee and St. Paul Railroad reached Grand Rapids in 1873, Wausau in 1874, and Merrill in 1881. In 1857-58 20,000 logs were driven from Tomahawk to Mosinee. The product of the mills in Portage County fell off after 1873, and in Marathon County soon after 1880, indicating the depletion of the timber supply, but in Lincoln County most of the lumber firms maintained their averages up to 1896.

In the Wolf Valley lumbering on a small scale began between 1840 and 1845 to supply sawmills on Lake Winnebago and at Shawano. In the early 50's New London was the center of operations. Pine was cut out first on the large streams and later on the smaller tributaries, the lumbering gradually extending farther from the streams and taking the timber more thoroughly. By 1879 the territory south of Shawano had become exhausted of the large pine, and hardwood and cedar were being cut for local use. A military road was made through the Menomonic Indian Reservation in 1864-67, from Fort Howard on Green Bay to the copper mining country, and that marks the date when lumbering began in the upper Wolf Valley, although there was very little timber cut in Langlade and Forest counties before 1885.

It is not possible to state the exact amount of land that has been cleared from year to year in northern Wisconsin. The State census gives the farm lands as improved or unimproved, but does not show the cutting done even on farms, much less follow the lumberman into the wilds. In general the lumberman kept no records, as he was interested only in what was the best paying timber, and his recollection can not at present be trusted beyond those points. Even a record of the lumber manufactured does not show the rate at which the land was cleared. The single pines cut out were replaced by a closing in of the young hardwoods, and the larger cut areas were soon covered by raspberry bushes, wild cherry, birch, and "popple." Fires often sweep the slashings several times before the brush obtains a fair start, and in such cases any valuable growth is prevented, especially as the worst fires are on the naturally dry land where the soil burns deep.

The three principal agents in clearing the land are the lumberman, the forest fire, and the farmer. The lumberman began operations about 1840, and was most active between 1850 and 1890, but during the past 20 years the more frequent fires and the increase in the number and size of farms have more than offset any decrease there may have been in the lumbering, so that on the whole it seems that the denudation has been continuous and quite steady during the last 70 years. According to the latest census reports about 25 per cent of the northern half of the State is under cultivation, but to this must be added the strips cleared for railroads and wagon roads, the large burned-over areas and the other nearly denuded regions. After carefully considering all of the information at hand, and as a result of considerable travel throughout the region, it is estimated that at present one-half of the northern part of the State is practically clear of timber and brush.

RAINFALL.

The rainfall records at a few places in and near the State extend back for 74 years, which probably covers most, if not all, of the entire period of deforestation. Of course, the early records are not as complete nor as extensive as desired, but they are sufficient for making some comparisons. At Fort Winnebago, near Portage, a record of the precipitation extends from 1836 to 1845. The average rainfall for those 10 years was 28.40 inches, while the mean at Portage for the 10 years from 1900 to 1909 was more than 1 inch greater, or 29.65 inches. At Fort Crawford (Prairie du Chien) the average rainfall from

1836 to 1844 was 31.17 inches, and for the last 9 years, 34.24 inches. At Fort Howard, on Green Bay, the average rainfall for the 5 years from 1836 to 1840 was 35.52 inches, while for the last 5 years it was only 29.18 inches at Green Bay, but at Fort Snelling, just outside of St. Paul, the average rainfall from 1837 to 1846 was only 25.01 inches, while for the last 10 years it was 31.40 inches.

The record at Milwaukee is complete since 1844 and the records at a few other places began between 1860 and 1889. From 1890 to date records have been made at from 40 to 80 stations, covering all portions of the State. A table has been prepared, showing the mean monthly and mean annual precipitation in the Wisconsin Valley above Portage for the last 20 years. During this time probably one-half of the denudation has taken place in the upper valley; not that the amount of lumber cut there during the last 10 years was as great as that cut during the 80's, but the clearing of the land by settlers has progressed rapidly during the two last decades. There is nothing in the table to indicate any decided or regular change in the amount of rain that falls in the upper Wisconsin Valley from year to year. Although the mean for the first 10 years is about 3 inches less than that for the last decade, this result is brought about by the fortunate grouping of the years and does not indicate that the precipitation is increasing.

From all of the data available it is found that the precipitation averages about 3 inches greater in the extreme upper Wisconsin Valley than in other portions of the State. This may be due to the somewhat greater elevation of that region. From the Lake Winnebago district to the central Wisconsin Valley there is a slight deficiency in precipitation, the reason for which can not be given. The average for the whole valley above Portage is practically the same as that for the State, but varies more or less from that of any of the stations having long records. The mean annual rainfall for the upper Wisconsin Valley has been computed for the years 1836 to 1889 by applying a correction to the available records, obtained by comparing the mean for the past 20 years at the stations having the early records with the mean for the valley during the same period. While the averages are not exact, they probably do not vary greatly from the true amounts.

An exhaustive study of all the records does not show any general decrease or increase in the precipitation in Wisconsin during the deforesting of one-half of the northern section of the State. When we consider the relatively small area of Wisconsin as compared to that occupied by the great atmospheric disturbances that cause the precipitation, no other result could be expected. A few acres of forests, or even many thousands of acres, can neither materially increase the humidity of the great ocean of air, nor reach up and draw down the rain from the clouds. Professor Moore states in his bulletin previously referred to that, "In New England, where deforestation began early in our history and has been extensive, the mean of the fluctuations in the rain curve is a steady rise since 1836 up to a few years ago, and in the Ohio Valley, where the forest area has been greatly diminished, there is no decrease in the rainfall." The last statement is as true of the Wisconsin Valley as of the Ohio.

RUN-OFF.

It appears to be the general opinion of those using the water for power purposes that there has been a slight shrinkage in the flow of the streams during the past 30 or 40 years. Many are quite firm in this belief, but the more careful observers and speakers, even though inclined to the theory, are either not positive as to the fact or say that there has been no change. As the land is cleared it is natural that the water should run off more rapidly and reach the rivers sooner than when the country was in the primeval state, as long as the forest floor is not saturated. As soon as the forest floor becomes saturated, the run-off from it

will be as rapid as from the open country, and this is the condition that prevails in time of flood. At first the lumberman opened the channels to allow free driving of the logs, but brush dams were built at intervals of a few miles to give a head of water for driving so that the rate of run-off was not greatly effected. Later, when the streams were not used for driving logs, they were gradually cleaned out as the country became settled, and ditches were dug so that the water could pass quickly into the streams. This is the object of farm drainage and of the ditches and culverts on the highways and railroads. If there are fall rains, followed by freezing weather while the water is still on the surface of the swamps and in the gravel soil at the headwaters of our streams, and if snow falls heavily and evenly, blanketing the ice against the possible "January or February thaw," then there is in March a large surplus of water to move out. What it will do depends entirely on the spring weather. Heavy warm rains will send the water down the stream in torrents, but if, as happened during the spring of 1910, the warm weather comes on slowly and the rains are moderate or light, the snow will melt gradually and pass off without causing floods. As far as the flow of the stream is concerned there is no advantage in holding the snow until the spring months, as the rivers then have all the water they can carry. The season when the water in the snow is most needed to increase the stream flow is during February and March, and not during the time of the spring floods in April and May. This is true of Wisconsin regardless of topographical conditions.

The only reliable records available for comparing the stream flow at present with that in the past are the river-gage readings made by the United States Engineers. While the river-gage readings do not give a complete history of the stream flow, they give a great deal, and they are the only measurements which have been made continuously for a considerable length of time. On the Wolf River there is a fairly complete record made at New London from 1886 to date, but on the Wisconsin River at Portage there are readings of the United States gage from 1873 to date. Previous to 1873 high stages of the rivers were occasionally described in the newspapers of the day, but it has not been possible to locate gage readings of those stages, if any were made. What is said to have been the highest flood known up to that time occurred in the Wisconsin River in April, 1866. A Wausau paper dated April 21 of that year says:

The new slide on the falls was washed out. The bridge over the main channel went out, the pins being struck by cribs of new lumber on their way down the stream without pilot or steersman, the surface of the river being completely covered with running ice, logs, machinery, cribs of lumber, etc. * * * It was soon learned that the mill at Jenney had been destroyed. * * * as a last resort the dam at Thayer's mill was practically torn out, which lowered the water at the lock several inches * * * but did not save the guard lock.

The story of the flow of the Wisconsin River since 1873 is told fairly well by the gage readings at Portage, except during the flood of 1881 when the levee broke and the water discharged into the Fox River. This was the highest flood on record at Wausau and Grand Rapids.

Fig. 1 shows the annual precipitation in the upper Wisconsin Valley, the average gage readings from April 1 to November 30, inclusive, of each year, the maximum and minimum stages, and the progress of deforestation. It will be seen that the annual gage readings vary almost directly with the rainfall and are apparently not affected by other causes. The minimum stages also follow the rainfall record quite closely, as the lowest stages were in the 90's when the rainfall was light, and the highest low-water stages in the early 80's when the precipitation was heavy for several years. The only changes in the river stages during the past 37 years, which do not correspond to the variations in the annual precipitation, are the maximum stages. The diagram indicates that the maximum stages have increased somewhat during recent years, but the apparent increases were

doubtless due to deficient levee protection during earlier years and to a certain extent to increased intensity of precipitation within a given period during later years. During the big flood of 1881, as stated before, the levee at Portage broke and the river discharged into the Fox, thus preventing a high maximum stage, and it is believed that the lack of the proper facilities for keeping the river in its channel at that point during early times accounts for many of the comparatively low maximum stages.

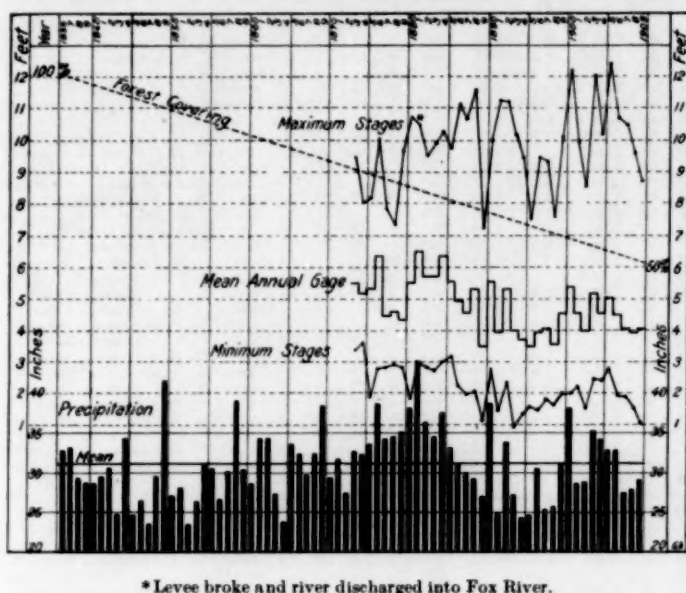


FIG. 1.—Annual precipitation and progress of deforestation, upper Wisconsin River Valley, and river gage record at Portage between April 1 and November 30.

Again, the 3 high stages of recent years, October, 1900, September, 1903, and June, 1905, all occurred late in the season, after the time of the spring floods, and were caused by excessive rains, the rainfalls exceeding 12 inches in each case during the few preceding weeks. The floods in those cases were due to intensity of the rainfall, which is not shown in the figure. It is very difficult, and probably impossible, to graphically represent the true relationship between rainfall and river height, as other climatic elements—temperature, wind, evaporation, etc.—as well as the condition of the drainage area, must be considered.

Usually on charts the monthly rainfall is compared with the daily gage readings, but this method is not satisfactory, as the periods are of such different lengths. It is preferable to compare the annual rainfall with the average annual gage readings, the monthly rainfall with the average monthly readings, and the daily rainfall with the daily readings. Fig. 2 shows the actual daily rainfall in the upper Wisconsin Valley and the gage readings at Portage from the middle of March to the end of July, 1905, including the highest stage, with but a single exception, ever recorded on the Portage gage, 12.4 feet on June 11, and the amount of rain that caused it. The total average fall in the whole upper Wisconsin Valley for the 3 days from June 4 to 6 was 5.46 inches, and at one station 8 inches fell in 24 hours and 11.20 inches during the 3 days. These are the highest known records for the corresponding lengths of time in that region. When the rain began the soil was already practically saturated with water, due to the heavy rains in May, and the river was moderately high.

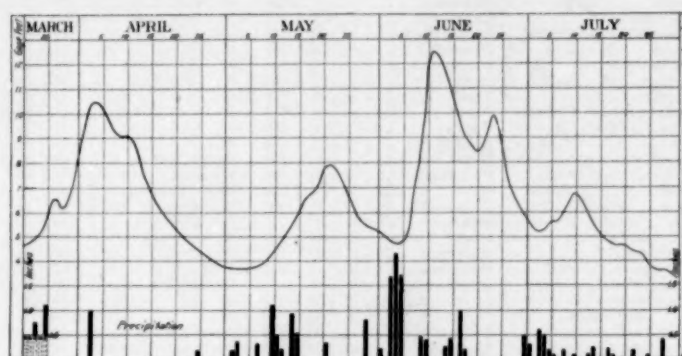


FIG. 2.—Daily precipitation in upper Wisconsin Valley; daily gage at Portage.

CONCLUSIONS.

1. Deforestation began about 70 years ago in northern Wisconsin, has been continuous since that time, and at the present time about one-half of the land is denuded.
2. Deforestation has had no appreciable effect on the precipitation.
3. Deforestation proper has not changed the stream flow, but farm drainage and the improvement of the small streams may have increased the rate of run-off slightly.

TABLE 1.—Climatological data for May, 1910. District No. 5, Upper Mississippi Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.					Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.		
North Dakota.																					
Amenia	Cass	954	12	51.0	- 3.6	78	27	21	12	46	0.80	- 1.93	0.70	0.0	2	14	10	7	nw.	C. E. Wood.	
Bottineau	Bottineau	1,638	14	48.6	- 3.1	84	27	20	12	46	1.70	- 0.47	0.48	0.0	9	15	5	11	se.	J. A. Kemp.	
Cando	Towner	1,488	8	48.2	- 2.4	84	27	12	12	53	0.92	- 1.12	0.30	0.0	4	15	5	11	se.	E. T. Judd.	
Crosby	Williams	1,482	3	49.5	- 4.7	79	27	21	1	39	2.21	- 1.00	0.63	2.0	8	15	10	6	nw.	H. C. Kaechau.	
Devils Lake	Ramsey	1,482	4	49.0	- 3.7	81	27	21	12	40	0.91	- 1.09	0.33	0.0	9	11	13	7	nw.	U. S. Weather Bureau.	
Donnybrook	Ward	1,760	10	51.1	+ 2.9	84	27	27	25	47	1.66	- 1.00	0.75	0.0	7	11	13	7	nw.	C. J. De Vore.	
Dunseith	Rolette	1,824	12	49.3	- 3.8	81	27	20	12	44	1.56	- 0.07	0.65	0.0	4	22	4	5	w.	L. H. Trowbridge.	
Edmore	Ramsey	1,324	4	51.4	- 0.1	83	14	15	12	47	1.20	- 0.07	0.50	0.0	3	10	13	8	n.	H. R. Aslakson.	
Forman	Sargent	1,249	15	55.4	- 0.1	83	14	26	2	46	0.64	- 2.03	0.36	0.0	3	10	13	8	nw.	A. Maltby.	
Grafton	Walsh	827	12	50.0	- 3.0	85	27	24	12	45	0.81	- 0.32	0.0	0.0	6	9	21	1	nw.	H. La Moure.	
Granville	McHenry	1,504	3	50.0	- 3.0	85	27	24	12	45	0.81	- 0.32	0.0	0.0	6	9	21	1	nw.	W. A. Christiansen.	
Hannah	Cavalier	1,568	4	45.8	- 4.8	75	27	10	12	45	0.79	- 0.41	0.4	0.0	7	10	19	4	nw.	J. Moffatt.	
Hansboro	Towner	901	2	47.2	- 4.2	84	27	19	12	45	1.39	- 0.45	0.4	0.0	7	10	19	4	nw.	Geo. Dale.	
Hillsboro	Trail	901	4	51.1	- 4.2	79	14	24	12	39	0.89	- 0.36	0.0	0.0	4	15	11	5	n.	M. H. Norman.	
Lakota	Nelson	1,519	3	48.2	- 4.2	79	27	18	11	45	1.26	- 0.41	0.0	0.0	10	7	21	3	nw.	C. R. Pettes.	
Langdon	Cavalier	1,615	14	46.8	- 4.8	81	28	15	12	45	0.75	- 0.33	0.0	0.0	6	17	0	14	w.	J. Woolner.	
Larimore	Grand Forks	1,134	14	49.4	- 2.9	81	14	22	12	41	1.21	- 0.83	0.34	0.0	7	15	5	11	n.	S. R. Britton.	
Leban	Ransom	1,091	5	50.9	- 2.9	81	14	20	2	48	1.16	- 0.80	0.85	0.0	2	17	7	7	nw.	H. K. Adams.	
McKinney	Ward	1,640	15	49.8	- 2.6	85	27	19	2	45	1.10	- 0.80	0.85	0.0	2	17	7	7	nw.	N. P. Swenson.	
Manfred	Wells	1,065	8	50.5	- 3.5	84	27	21	12	52	0.84	- 0.28	0.0	0.0	6	6	20	5	nw.	P. B. Anderson.	
Mayville	Trail	1,975	14	54.6	- 0.4	73	27	35	1	15	0.69	- 1.96	0.34	0.0	4	10	21	0	nw.	M. N. Pope.	
Minto	Ward	1,557	11	52.4	- 0.8	84	27	28	2	49	1.13	- 1.33	0.58	0.0	8	22	0	9	nw.	J. J. Bates.	
Minto	Walsh	820	10	50.0	- 3.6	81	27	20	12	46	2.20	+ 0.13	0.77	0.0	10	15	9	7	n.	S. S. Marsh.	
Oriska	Barnes	1,270	4	51.3	- 3.3	81	14	23	12	42	0.56	- 0.22	0.0	0.0	6	5	24	2	nw.	W. E. Williams.	
Park River	Walsh	998	6	49.8	- 4.8	83	27	21	12	39	0.74	- 0.33	0.0	0.0	7	16	13	2	n.	A. Heyward.	
Pembina	Pembina	789	11	48.1	- 4.6	79	30	20	12	44	1.46	- 0.60	0.22	0.5	9	18	3	10	e.	C. W. Shumaker.	
Portal	Ward	1,954	15	48.9	- 4.9	82	14	18	2	51	0.59	- 1.81	0.31	T.	2	12	13	6	nw.	M. S. Davis.	
Power	Richland	1,020	17	48.9	- 4.9	82	14	18	2	51	0.59	- 1.81	0.31	T.	2	12	13	6	nw.	J. A. Power.	
Pratt	McHenry	925	5	49.6	- 4.6	85	26	26	13	42	0.98	- 0.45	0.0	0.0	5	15	8	8	nw.	C. H. Butta.	
University	Grand Forks	830	18	50.0	- 3.7	87	27	21	12	44	0.50	- 2.04	0.28	0.0	5	14	8	9	n.	W. R. Holgate.	
Wahpeton	Richland	962	18	48.8	- 7.7	80	18	21	13	44	0.57	- 2.44	0.46	0.0	2	16	5	10	nw.	E. G. Burch.	
Walhalla	Pembina	966	5	49.8	- 4.8	86	27	17	20	51	1.39	- 0.90	0.0	0.0	6	17	1	13	nw.	C. H. Lee.	
Westhope	Bottineau	1,471	10	48.2	- 4.0	85	27	10	16	40	0.89	- 1.08	0.33	0.0	5	4	23	4	nw.	J. D. Currie.	
Willow City	do	1,471	10	48.2	- 4.0	85	27	10	16	40	0.89	- 1.08	0.33	0.0	5	4	23	4	nw.	M. A. Ostby.	
Minnesota.																					
Albert Lea	Freeborn	1,229	20	54.8	- 3.0	82	8	29	3	43	2.50	- 1.83	0.85	0.0	7	13	11	7	nw.	Edward Carey.	
Alexandria	Douglas	1,391	10	52.8	- 1.0	81	19	28	3	40	1.07	- 1.24	0.45	0.0	4	20	2	9	nw.	P. O. Unumb.	
Angus	Polk	870	8	49.4	- 4.4	78	27	20	13	44	0.71	- 0.22	0.0	0.0	5	13	9	9	n.	John Nadvornik.	
Bagley	Clearwater	4	4	48.2	- 4.2	75	14	18	2	43	1.31	- 0.42	T.	8	9	17	5	nw.	Jens Nelson.		
Baudette	Beltrami	1,084	1	49.1	- 4.1	76	27	21	3	41	1.26	- 0.48	0.2	8	20	5	6	sw.	Franz W. Schmidt.		
Beardsley	Bigstone	1,090	17	51.6	- 5.1	84	18	24	3	45	0.39	- 0.22	0.0	0.0	4	7	16	6	nw.	Roy A. Smith.	
Beaulieu	Mahnomen	1,200	8	50.8	- 5.8	77	14	24	2	41	1.41	- 0.45	T.	7	6	16	9	n.	Dr. L. A. Parkinson.		
Bird Island	Renville	1,039	20	53.4	- 3.2	79	18	27	3	42	1.54	- 1.69	1.07	0.0	5	16	5	10	nw.	Dr. F. L. Puffer.	
Caledonia	Houston	1,179	17	53.6	- 3.7	76	20	31	3	31	1.87	- 3.28	1.20	0.0	4	16	2	13	nw.	W. D. Beiden.	
Campbell	Wilkin	984	1	51.0	- 5.0	83	19	20	2	45	0.52	- 0.20	0.0	0.0	4	17	4	10	nw.	J. T. Neises.	
Cass Lake	Cass	1,300	4	54.2	- 2.0	79	18	32	2	32	1.30	- 0.65	0.0	0.0	3	16	1	13	nw.	C. W. Burns.	
Collegeville	Stearns	1,282	17	54.2	- 2.0	79	18	32	2	32	1.30	- 0.65	0.0	0.0	3	16	1	13	nw.	Fridolin Tembreul.	
Crookston	Polk	863	20	50.0	- 3.5	79	28	25	12	35	0.66	- 1.59	0.19	0.0	7	20	3	8	n.	A. G. Andersen.	
Detroit	Becker	1,364	14	49.6	- 3.1	78	15	19	2	42	1.11	- 2.79	0.32	0.0	7	20	6	5	nw.	George W. Peoples.	
Fairmont (near)	Martin	1,240	23	52.2	- 4.4	75	18	27	3	34	2.25	- 2.03	0.75	0.0	7	15	9	7	nw.	W. F. Wherland.	
Fairbault	Rice	1,003	13	52.3	- 4.9	78	18	22	3	39	1.62	- 1.90	0.61	0.0	8	16	10	5	nw.	Dr. A. R. T. Wylie.	
Farmington	Dakota	902	22	54.8	- 1.4	81	19	24	4	43	1.54	- 2.05	1.07	0.0	3	18	2	11	nw.	D. F. Akin.	
Fergus Falls	Ottertail	1,210	18	52.9	- 2.3	78	18	28	12	35	0.63	- 2.67	0.36	0.0	6	17	11	3	nw.	Chas. E. Kisseger.	
Fort Ripley	Crow Wing	1,136	4	51.8	- 4.8	83	19	21	3	51	0.95	- 0.95	0.95	0.0	1	16	2	13	nw.	J. J. Tucker.	
Foreston	Polk	1,289	1	47.6	- 4.6	73	14	22	13	50	0.87	- 0.25	0.0	0.0	9	12	16	3	s.	O. N. Hem.	
Glencoe	McLeod	1,000	14	54.6	- 0.5	79	18	28	3	37	2.15	- 1.93	1.45	0.0	4	15	13	3	nw.	C. G. Selvig.	
Grand Meadow	Mower	1,338	23	52.3	- 4.3	75	8	23	3	40	3.70	- 1.14	- 1.82	T.	5	12	7	12	n.	C. F. Greening.	
Hallock	Kittson	815	11	49.2	- 3.6	81	27	18	13	48	1.45	- 0.86	0.35	0.0	9	17	7	7	n.	D. A. Robertson.	
Halstad	Norman	870	4	50.2	- 5.2	79	15	18	12	47	0.75	- 0.26	0.0	0.0	7	18	4	9	nw.	Aaron G. Holstrom.	
Hinckley	Pine	1,050	5	51.5	- 5.5	80	19	24	3	45	0.45	- 0.22	0.0	0.0	3	6	19	6	s.	W. R. Newman.	
International Falls	Koochiching	1,112	2	49.0	- 4.0	76	27	29	3	45	1.32	- 0.50	0.0	0.0	7	20	6	5	w.	Rees Roe.	
Kelliher	Beltrami	3	3	48.2	- 2.7	71	14	20	3	42	1.53	- 1.90	0.45	0.0	10	4	23	4	w.	A. Gilmour.	
Lake Crystal	Blue Earth	1,301	22	48.2	- 2.7	71	14	20	3	42	1.53	-									

TABLE 1.—Climatological data for May, 1910. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
Minnesota—Cont'd.																				
Taylor Falls.	Chisago.	750	3	53.6		78	19	25	3	42	1.12		1.12	0.0	1	13	9	9	n.	Mpls. Gen. Elec. Co.
Warroad.	Roseau.	1,069	1	48.2		77	27	22	3	41	3.44		2.02		9	19	3	9	n.	John H. Sawyer.
West Concord.	Dodge.	1,232	1	52.4		77	18	25	3	39	1.98		0.92	0.0	4	12	13	6	nw.	H. H. Orcutt.
Willow River.	Pine.	1,046	12																	J. A. Brandt.
Windom.	Cottonwood.	1,336	4	53.8		79	18	25	3	41	1.30		0.82	0.0	3	14	10	7	n.	Taber C. Richmond.
Winnabago.	Faribault.	1,100	11			85	20	33	12	37	1.72	- 3.13	0.60	0.0	6	19	4	8	nw.	H. H. Haight.
Winnibigoshish.	Itasca.	1,300	22	51.1	- 0.4	72	37	25	3	36	1.90	- 1.14	0.72	0.0	7	21	7	3	nw.	John Duncan.
Winona.	Winona.	700	15	56.0	- 3.7	79	18	30	3	40	2.98	- 2.11	1.33	0.0	7	13	8	10	nw.	Perry C. Myers.
Worthington.	Nobles.	979	15	51.4	- 5.0	74	19	24	3	36	1.74	- 2.26	0.60	0.0	5	18	1	12	n.	W. I. Carpenter.
Zumbrota.	Goodhue.	917	15	52.6	- 5.4	76	18	23	3	45	2.25		0.92	0.0	3	19	7	5	nw.	W. C. Rowell.
South Dakota.																				
Milbank.	Grant.	1,148	18	52.2	- 3.5	87	19	25	3	45	0.43	- 3.12	0.32	0.0	3	20	0	11	nw.	I. T. Patridge.
Wisconsin.																				
Antigo.	Langlade.	1,489	16	50.6	- 3.8	76	27	19	4	42			1.32	0.0	4	17	11	3	nw.	Elton C. Larzelere.
Barron.	Barron.	1,115	18	50.2	- 2.8	75	19	19	3	43	2.17	- 2.27	1.06	0.0	4	17	11	3	nw.	Wm. A. Kent.
Beloit.	Rock.	750	23	54.0	- 4.1	75	20	32	5	29	3.84	+ 0.27	1.06	0.0	10	17	4	10	ne.	Smith Observatory.
Brodhead.	Green.	812	12	55.0	- 4.4	78	19	29	4	38	2.79	- 0.89	0.57	0.0	9	18	10	3	sw.	Hecklore D. Kirkpatrick.
Burnett.	Dodge.	880	6	51.9		76	19	26	14	36	1.95		0.53	T.	11	14	7	10	se.	Geo. W. Smith.
Delavan.	Walworth.	920	17	52.6	- 4.5	81	19	25	5	38	4.07	+ 0.37	1.37	0.0	9	11	8	12	ne.	Elwood S. Austin.
Dodgeville.	Iowa.	1,116	11																	Geo. W. Butler.
Downing.	Dunn.	983	8	50.4		80	27	16	3	50	2.69		1.92	0.0	6	11	4	16	nw.	Eugene F. Stoddard.
Eau Claire.	Eau Claire.	800	19	54.1	- 2.9	78	19	26	3	41	3.08	- 0.98	1.92	0.0	6	17	6	8	nw.	Robert D. Whitford.
Ellsworth.	Pierce.	1,068	2																	Henry G. Wood.
Glidden.	Ashland.	1,519	18	48.0		76	19	19	3	45	2.51		1.40	T.	9	17	4	10	ne.	George Sell.
Grand Rapids.	Wood.	1,021	11	52.1	- 4.3	76	27	26	4	41	1.63	- 2.70	0.60	0.0	6	17	5	9	nw.	Willis B. Raymond.
Grantsburg.	Burnett.	1,095	19	51.6	- 3.2	79	19	18	4	50	0.93	- 2.96	0.75	0.0	2	12	10	9	nw.	Theodore Olsen.
Hancock.	Waushara.	1,091	18	53.6	- 3.0	77	19	26	3	36	1.21	- 2.87	0.52	0.0	8	11	15	5	nw.	Frederick B. Hamilton.
Hatfield.	Jackson.	973	15	53.1		79	8	26	4	46	2.20		1.17	0.0	5	12	6	13	sw.	Walter S. Woods.
Hayward.	Sawyer.	1,197	19	47.6	- 5.8	78	19	18	3	44	3.20	+ 0.01		T.	5	3	13	7	4	William E. Swain.
Hillsboro.	Vernon.	1,000	19	51.0	- 4.7	78	18	24	4	45	1.55	- 2.59	0.85	0.0	4	21	7	3	e.	Emil V. Wernick.
Koepenick.	Langlade.	1,683	20	46.5	- 8.4	74	19	16	4	48	1.94	- 1.74	1.13	T.	5	4	16	11	nw.	Edward S. Koepenick.
La Crosse.	La Crosse.	714	38	55.3	- 4.3	78	18	31	4	36	1.63	- 2.12	0.93	0.0	6	12	8	11	n.	U. S. Weather Bureau.
Lake Mills.	Jefferson.	897	19	52.2	- 4.9	77	20	28	3	34	3.05	- 0.98	0.74	T.	10	9	11	11	ne.	S. Newton Dexter Smith.
Lancaster.	Grant.	1,070	20	54.1	- 3.7	76	20	31	3	34	3.86	- 0.49	1.00	0.0	11	17	6	8	w.	Edward Pollock.
Long Lake.	Oneida.	1,592	2	46.4		78	19	12	4	53	2.50		1.60	0.0	13	14	8	9	nw.	Louie Frank.
Madison.	Dane.	974	32	53.4	- 4.2	75	18	33	3	29	2.82	- 0.80	0.64	T.	11	11	12	8	ne.	U. S. Weather Bureau.
Mather.	Juneau.	962	6	51.7		77	19	23	3	41	1.65		0.74	0.0	7	12	8	11	e.	Frank Evans.
Mauston.	do.	882	14	53.2	- 2.8	75	19	28	3	35	1.35	- 2.92	0.75	0.0	4	17	7	7	nw.	Eugene L. Hitchcock.
Meadow Valley.	do.	974	19	51.6	- 4.6	78	20	23	3	45	1.49	- 2.80	0.73	0.0	4	6	18	7	nw.	Charles H. Johnson.
Medford.	Taylor.	1,420	19	50.6	- 3.2	74	19	25	4	42	3.85	- 0.50		T.	6	16	7	8	n.	William Zeit.
Merrill.	Lincoln.	1,267	4	50.8		80	20	23	4	49	2.07		1.20	T.	6	22	7	2	n.	Frank M. McElroy.
Minocqua.	Vilas.	1,604	6	47.6		76	19	17	4	46	3.49		2.30	0.0	9	16	5	10	n.	Benjamin W. Applebee.
Mondovi.	Buffalo.	738	2	53.2		78	19	23	3	43	3.00		1.64	0.0	8	12	11	8	nw.	Dr. Charles Hebard.
Mount Horeb.	Dane.	1,226	6	52.1		76	19	28	3	36	3.67		0.95	0.0	11	15	5	11	s.	W. M. Lewis.
Muscoda.	Grant.	666	1	55.2		82	20	29	5	42	2.30		0.96	0.0	7	13	10	8	ne.	Henry Eckstein.
Neillsville.	Clark.	996	21	53.0	- 2.3	79	27	23	3	46	1.89	- 1.97	0.50	0.0	4	20	0	11	nw.	William Heaslett.
New Richmond.	St. Croix.	990	5	53.0		81	19	22	3	45	1.75		0.80	0.0	3	10	17	4	nw.	Franc A. R. Van Meter.
Oscola.	Polk.	806	19	52.7	- 1.8	80	19	18	3	45	1.64	- 2.53	0.90	0.0	6	13	13	5	e.	Charles W. Staples.
Portage.	Columbia.	809	14	54.5	- 3.7	79	19	26	3	40	2.78	- 1.15	1.29	0.0	6	18	9	4	ne.	James Clear.
Prairie du Chien.	Crawford.	690	23	55.8	- 4.8	79	18	31	4	39	3.06	- 1.10	1.34	0.0	9	13	4	14	nw.	James A. Gillis.
Prentice.	Price.	1,551	12	47.8	- 4.9	74	19	20	3	45	2.77	- 0.80	1.10	T.	7	16	4	11	nw.	Joseph G. Lash.
Rhineland.	Oneida.	1,550	4	49.2		76	19	22	4	45	2.46		1.65	0.0	11	11	11	9	nw.	John Lind.
Sauk City.	Sauk.	758	2	54.6		79	19	27	5	43					14	4	10			Kileen Dierleth.
Shullsburg.	Lafayette.	1,019	4	53.2		75	20	26	4	37	3.70		0.76	0.0	12	13	10	8	nw.	Harrison B. Chamberlin.
Solon Springs.	Douglas.	1,083	4	48.1		75	27	16	3	46	2.00		0.80	0.0	5	17	6	8	n.	John M. Sayles.
Spooner.	Waushara.	1,104	15	51.4	- 3.4	78	19	22	3	39	2.44	- 0.87	2.00	0.0	6	21	3	7	nw.	Horace A. Brees.
Stanley.	Chippewa.	1,082	6	51.4		74	19	28	3	41	3.38		2.22	0.0	9	18	5	8	nw.	W. Humphrey Scott.
Stevens Point.	Portage.	1,113	17			74	18	25	4	39	1.37	- 2.81	0.70	0.0	3	8	8	6	se.	Garry E. Culver.
Valley Junction.	Monroe.	930	18	52.8	- 3.5	78	19	25	3	43	2.14	- 2.60	0.89	0.0	7	14	8	9	nw.	Frederick Muermann.
Viroqua.	Vernon.	1,412	19	54.2	- 2.5	74	19	28	3	36	1.83	- 3.03	1.05	0.0	5	11	9	11	nw.	Henry E. Rogers.
Vudens.	Vilas.	1,600	2	45.4		78	18	15	4	43	2.10		1.00	0.0	9	17	10	4	nw.	Louis L. Thomas.
Watertown.	Jefferson.	824	19	52.8	- 4.0	77	19	29	4	33	2.87	- 1.06	0.50	T.	12	14	9	8	n.	Charles J. Salick.
Waukesha.	Waukesha.	864	14	51.8	- 5.2	77	19	28	14	33	3.25	- 0.41	0.83	0.0	8	10	20	1	ne.	Carroll College.
Wausau.	Marathon.	1,212	17	52.2	- 3.2	76	19	26	3	40	1.54	- 2.42	0.89	0.0	6	21	4	6	n.	George H. Halder.
Weyerhaeuser.	Rusk.	1,297	3	49.6		76	19	22	14	47	2.81		1.94	0.0	10	13	14	4	nw.	Miss Etta Stiles.
Whitehall.	Trempealeau.	675	18	54.2	- 2.7	77	19	20	3	45					17	0	14	nw.	Henry A. Townner.	
Iowa.																				
Albia.	Monroe.	959	12	55.4	- 5.6	79	20	34	13	34	3.99	- 0.34	0.91	0.0	14	15	6	10	nw.	J. I. Chenoweth.
Algona.	Kossuth.	1,213	36	54.5	- 5.0	79	18	24	3	40	2.00	- 1.68	0.70	0.0	7	18	5	8	ne.	Dr. F. T. Seeley.
Alta.	Buena Vista.	1,513	19	53.8	- 4.2															

TABLE 1—Climatological data for May, 1910. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.					Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, all or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Iowa—Cont'd.																				
Fairfield.	Jefferson.	26	56.9	- 3.3	81	21	33	4	31	3.75	- 1.53	1.12	0.0	14	19	5	7	nw.	R. Monroe McKenzie.	
Fayette.	Fayette.	1,003	50.4	- 3.4	77	20	34	3	38	2.82	- 1.98	0.77	0.0	7	17	7	7	nw.	R. J. Latimer.	
Forest City.	Winnebago.	1,226	53.4	- 4.9	80	18	26	3	40	2.14	- 2.25	1.00	0.0	6	18	3	10	w.	J. A. Peters.	
Fort Dodge.	Webster.	1,126	54.6	- 5.4	82	10	29	4	42	2.48	- 2.06	1.03	0.0	10	20	0	11	n.	J. F. Monk.	
Fort Madison.	Lee.	516	61							6.32	+ 1.92	1.37	0.0	9	6	10	15	s.	Miss L. A. McCready.	
Gilman.	Marshall.	1,032	11							4.13	- 0.31	1.62	0.0	7					J. L. Wylie.	
Grand Meadow.	Clayton.	1,180	19	53.8	- 4.3	75	18	29	4	35	3.94	- 0.92	2.12	0.0	10	15	6	10	nw.	F. L. Williams.
Greene.	Butler.	1,023	12	55.4	- 4.0	83	27	27	3	40	3.09	1.55	0.89	0.0	9	11	9	11	w.	J. L. Cole.
Grinnell.	Poweshiek.	1,023	18	59.0	- 0.7	82	10	38	3	34	3.89	- 0.70	0.97	0.0	11	15	10	6	nw.	D. W. Brainerd.
Grundy Center.	Grundy.	976	19	56.0	- 2.5	81	10	28	4	37	2.83	2.33	0.80	0.0	7	12	11	8	nw.	J. B. Calderwood.
Guthrie Center.	Guthrie.	1,077	15	55.3	- 5.3	80	20	28	4	41	3.37	1.59	0.78	0.0	14	15	7	9	nw.	D. G. Beardsley.
Hampton.	Franklin.	1,155	20	54.8	- 3.5	81	18	28	3	41	1.97	2.61	0.75	0.0	7	13	9	9	nw.	E. C. Grenelle.
Humboldt.	Humboldt.	1,095	22	54.8	- 4.6	81	18	23	3	44	2.64	1.72	1.65	0.0	8	22	2	7	nw.	Henry S. Wells.
Independence.	Buchanan.	921	46	54.8	- 5.3	76	20	29	4	37	2.63	1.59	0.90	0.0	7	19	6	6	nw.	George Donohoe.
Indianola.	Warren.	969	19	56.5	- 4.2	80	20	34	3	33	3.57	1.07	0.72	0.0	13	16	7	14	nw.	John L. Tilton.
Iowa City.	Johnson.	683	50	55.6	- 4.7	78	20	33	4	36	3.57	0.80	0.73	0.0	13	16	3	12	se.	A. G. Smith.
Iowa Falls.	Hardin.	1,170	17	53.9	- 4.8	80	27	28	4	43	1.81	- 2.39	0.87	0.0	4	18	0	13	nw.	J. B. Parmelee.
Jefferson.	Greene.	11																	G. W. Jackson.	
Keokuk.	Lee.	547	39	59.0	- 4.2	82	21	37	5	28	4.87	+ 2.52	2.99	0.0	15	16	8	7	nw.	U. S. Weather Bureau.
Keosauqua.	Van Buren.	644	18	57.2	- 5.4	85	21	34	4	39	4.87	1.82	0.0	15	8	11	12		J. H. Landes.	
Knoxville.	Marion.	920	15	57.6	- 4.6	83	20	35	4	37	3.06	0.51	0.70	0.0	12	15	6	10	nw.	Cassey & Belville.
Lacrosse.	Warren.	11									3.68	1.54	1.00	0.0	12	7	19	3		J. B. Aiter.
Le Claire.	Scott.	876	18								4.11	0.32	0.89	0.0	15					Miss M. T. Disney.
Marshalltown.	Marshall.	947	18	54.8	- 4.9	81	10	30	4	40	3.31	1.42	1.07	0.0	10	19	3	9	nw.	Ralph B. Reasoner.
Mason City.	Cerro Gordo.	1,132	13	52.6	- 5.8	77	18	24	3	43	2.32	2.34	1.10	0.0	6	14	8	9	nw.	J. S. Mills.
Mount Pleasant.	Henry.	729	29	57.6	- 4.6	89	21	34	4	41	4.25	+ 0.07	1.76	0.0	11	14	8	9	nw.	J. W. Edwards.
Muscataine.	Muscataine.	50									4.39	+ 0.01	1.25	0.0	13					William Molis.
New Hampton.	Chickasaw.	1,109	13	54.8	- 3.4	79	8	32	4	37	2.91	- 1.73	0.85	0.0	5	20	3	8	w.	A. F. Kemman.
Newton.	Jasper.	944	22																J. P. Beatty.	
Northwood.	Worth.	1,222	14	53.5	- 4.4	77	19	27	3	38	2.66	- 2.32	1.03	0.0	6	17	6	8	nw.	Chas. H. Dwell.
Olins.	Jones.	760	12	56.4	- 3.6	81	10	30	4	42	3.36	- 1.13	1.15	0.0	9	15	10	6	nw.	C. M. Miles.
Osage.	Mitchell.	1,184	23	55.2	- 1.9	77	8	25	3	41	3.49	- 1.29	1.11	0.0	5	16	6	9	nw.	A. A. Bundy.
Oskaloosa.	Mahaska.	943	34	57.1	- 3.3	82	20	34	13	39	3.55	- 0.13	0.81	0.0	10	16	2	13	nw.	Joseph Boyd.
Ottumwa.	Wapello.	649	15	59.0	- 4.0	83	20	39	4	37	2.57	- 2.07	0.56	0.0	11	5	3	23	nw.	W. J. Meamer.
Pella.	Marion.	877	8	56.2	- 5.1	81	9	29	4	41	2.94	- 1.38	0.74	T.	14	23	1	7	nw.	John H. Ver Steeg.
Perry.	Dallas.	975	9	56.1	- 5.8	81	10	31	4	43	3.02	- 1.98	0.55	0.0	7	13	10	8		J. A. Harvey.
Plover.	Pocahontas.	1,426	14	53.9	- 5.2	82	18	22	3	44	1.29	- 2.98	0.55	0.0	3	19	8	4	nw.	J. S. Smith.
Pocahontas.	do.	1,248	6	53.5		80	18	24	3	40	1.97	0.90	0.0	8	17	6	8	nw.	F. E. Hronek.	
Ridgeway.	Winnebago.	1,215	12	55.4	- 4.2	79	31	28	3	36	4.12	- 1.25	2.10	0.0	10	20	5	5	s.	Arthur Betts.
Rockwell City.	Calhoun.	1,122	14	55.7	- 3.8	80	18	29	3	40	3.90	- 0.84	1.40	0.0	7	17	9	6		C. M. Randall.
Sac City.	Sac.	1,278	34	54.9 ^b	- 3.7	80 ^b	10	30 ^b	3	38 ^b	2.39	- 1.84	1.11	0.0	6				nw.	E. N. Bailey.
St. Charles.	Madison.	1,070	9	56.6	- 5.3	81	20	34	3	34	3.45	- 1.47	0.80	0.0	12	15	9	7	nw.	R. D. Minard.
Sigourney.	Keokuk.	877	14	56.6	- 6.4	79	10	34	4	36	2.98	- 1.15	0.71	0.0	9	5	22	4	nw.	J. T. Parker.
Stockport.	Van Buren.	8		56.0		82	21	30	4	38	4.03	+ 0.27	1.57	0.0	13	14	8	9	nw.	C. L. Bewick.
Storm Lake.	Buena Vista.	1,440	21	53.9	- 3.7	77	18	26	3	37	2.77	- 1.11	1.03	0.0	7	18	7	6	n.	S. B. Fracker.
Stuart.	Guthrie.	1,216	11	55.2 ^a	- 6.0	83 ^a	20	31 ^d	3	36 ^a			0.0							J. P. Fox.
Tipton.	Cedar.	807	11	58.8	- 1.7	79	20	38	5	34	4.35	- 0.83	1.92	0.0	9	18	11	2	nw.	F. K. Gregg.
Toledo.	Tama.	856	16	56.7	- 4.0	80	1	33	14	28	3.59	- 0.60	0.82	0.0	10	16	8	7	nw.	I. F. Giger.
Wapello.	Louisa.	588	12	57.6	- 5.0	79	20	36	5	30	3.41	- 0.48	1.13	0.0	8	14	12	5	nw.	G. W. Schofield.
Washington.	Washington.	789	28	56.6	- 4.4	79	20	35	4	36	3.57	+ 0.06	1.01	0.0	10	12	11	8	nw.	Wm. A. Cook.
Waterloo.	Black Hawk.	862	27	56.2	- 3.3	78	9	31	4	38	2.05	- 1.91	0.81	0.0	10				nw.	M. L. Newton.
Waukeo.	Dallas.	1,039	7	56.5		78	10	30	3	37	3.08	- 1.87	0.68	0.0	14	13	12	6	nw.	Samuel F. Folt.
Waverly.	Bremer.	945	14	54.8	- 5.2	79	20	30	3	38	1.97	- 2.73	0.63	0.0	8	9	13	9	e.	H. S. Hoover.
Webster City.	Hamilton.	85		56.4		85	10	26	4	48	1.83	0.57	0.0	6	14	9	8	nw.	C. D. Carpenter.	
West Bend.	Palo Alto.	1,197	17	54.0	- 4.6	80	18	28	13	41	1.59	- 2.04	0.58	0.0	6	12	10	9	nw.	Joseph Dorewiler.
Whitten.	Hardin.	1,036	13	55.8	- 3.5	81	10	30	3	38	2.19	- 2.17	1.00	0.0	5	16	8	7	nw.	F. P. Butler.
Winterset.	Madison.	1,129	19	56.9	- 4.3	81	10	34	3	40	4.08	+ 0.22	0.95	0.0	13	10	9	12	n.	Robert S. Cooper.
Zearing.	Story.	6																	Orley Reese.	
Missouri.																				
Gorin.	Scotland.	700	24							6.19	+ 1.80	1.84	0.0	11	9	8	14	nw.	J. W. Pulliam.	
Hannibal.	Marion.	534	18	58.4	- 6.0	82	28	39	13	27	6.58	+ 1.58	1.72	0.0	16	10	10	11	nw.	U. S. Weather Bureau.
Louisiana.	Pike.	500	32	58.8	- 4.9	84	10	34	5	39	7.34	+ 2.87	1.55	0.0	14	15	6	10	se	J. T. Farrell.
Mexico.	Audrain.	797	32	58.6	- 5.9	84	10	37	4	41	8.48	+ 3.69	2.10	0.0	16	14	2	15	e.	J. F. Llewellyn.
Steffenville.	Lewis.	576	17	58.6	- 5.1	83	21	36	4	30	8.58	+ 3.19	2.32	0.0	12	11	13	7	ne.	Lewis Spriggs.
Sublett.	Adair.	1,000	30	57.8	- 4.6	89	28	35	13	36	9.85	+ 4.31	2.00	0.0	10	6	14	11	nw.	Frank Hall.
Warrenton.	Warren.	865	20	59.9	- 4.9	87	20	37	4	36	6.58	+ 1.75	1.63	0.0	16	10	6	15	s.	Dr. J. H. Frick.
Indiana.																				
Collegeville.	Jasper.	11		51.7	- 6.4	80	22	28	4	39	6.40	+ 2.13	2.70	0.0	10	4	12	15	n.	Prof. L. C. Klosterman.
Knox.	Starke.	716	5	55.2		80	22	30	5	36	5.07		1.03	0.0	13	14	9	8	nw.	W. R. R. Tatman.
Laporte.	Laporte.	810	14	54.5 ^a		81 ^a	22	34 ^a	4	33 ^a	6.31	+ 2.20	1.38	0.0	15	17 ^b	6 ^b	6 ^b	nw.	J. E. Hallinen.
Plymouth.	Marshall.	790	7	53.4		77	22	30	14	32	4.54		1.10	0.0	11	10	14	7	nw.	J. W. Siders.
Illinois.																				
Aledo.	Mercer.	738	10	56.2	- 4.2	79	20	30	5	32	4.37	- 0.14	1.58	0.0	13	10	12	9	ne.	Wm. B. Frew.
Alexander.	Morgan.	670	17	57.8	- 5.7	81	28	32	4	32	5.25	+ 0.95	1.19	0.0	12	8	10	13	nw.	George H. Hall.
Antioch.	Lake.	861	9	52.4		80	19	28	5	38	4.94		1.68	0.0	5	9	11	11	n.	J. C. James, jr.
Astoria.	Fulton.	650	11	57.0	- 4.3	81	28	33	4	32	6.33	+ 2.40	1.27	0.0	11	11	10	10	nw.	Ed. V. Bohl.
Aurora.	Kane.	687	31	53.8	- 5.1	80	21	29	5	35	6.20	+ 2.08	2.24	0.0	12	7	11	13	se.	W. Holden.
Bement.	Piatt.	700	3	57.7		80	20	29	4	39	7.15		1.45	0.0	10	19	3	9	s.	Rev. C. S. Adams.
Benton.	Franklin.	598	8	62.6		83	21	40	5	36	4.17		1.45	0.0	8	5	10	16	sw.	F. H. Stamper.
Bloomington.	McLean.	840	19	57.2 ^a	- 5.6	81 ^a	22	31	4	37 ^a	5.31	+ 0.57	1.92	0.0	10	14	9	8		

TABLE 1.—Climatological data for May, 1910. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
Illinois—Cont'd.																				
Henry	Marshall	500	22	57.0	- 4.1	82	21	31	5	36	6.00	+ 1.78	2.00	0.0	12	16	10	5	ne.	Dr. F. A. Powell.
Hillsboro	Montgomery	675	16	58.2	- 6.2	82	20†	34	4	34	6.03	+ 1.34	2.10	0.0	11	17	12	2	nw.	Ira L. Woodward.
Joliet	Will	541	19	54.6	- 5.9	82	21†	32	5†	37	4.90	+ 0.98	1.28	0.0	11	12	7	12	ne.	F. M. Mublig.
Kishwaukee	Winnebago	730	22	54.6	- 3.3	76	19†	29	5	34	4.25	+ 0.14	1.06	0.0	14	10	12	9	se.	Geo. Stevens.
La Grange	Cook	657	18	54.0 ^b	- 4.1	82 ^b	22	31 ^b	4†	40 ^b	5.13	+ 1.38	1.25	0.0	11	11	12	8	w.	Prof. F. E. Sanford.
La Harpe	Hancock	698	31	56.8	- 5.8	84	21	33	5	36	6.88	+ 2.43	3.20	0.0	12	17	5	9	sw.	Jno. S. Campbell.
Lanark	Carroll	883	21	53.3	- 5.2	76	19†	24	5	39	3.31	+ 1.17	0.99	T.	9	22	5	4	nw.	M. N. Werts.
La Salle	La Salle	536	33	56.0	- 4.8	82	21	34	4	30	6.02	+ 2.10	1.55	0.0	15	11	8	12	ne.	U. S. Weather Bureau.
Lincoln	Logan	482	22	57.6	- 5.1	84 ^a	22	30	4†	35	5.97	+ 2.05	1.01	0.0	10	12	12	7	se.	Prof. C. S. Ogilvie.
Martinton	Iroquois	633	23	55.2 ^a	- 5.1	84 ^a	22	30	4†	41 ^a	4.47	+ 0.22	1.30	0.0	12	12	9	10	n.	Jos. H. Peltier.
Mascoutah	St. Clair	425	20	62.5 ^a	- 1.7	87 ^a	20†	37	4†	34 ^a	5.22	+ 0.30	2.95	0.0	8	11	11	9	sw.	Geo. Henrich.
Minonk	Woodford	745	17	56.8	- 5.2	86	22	30	4	38	4.52	+ 0.68	1.53	0.0	11	16	8	7	sw.	O. M. Davison.
Monmouth	Warren	784	18	57.6	- 4.1	87	21	30	5	36	4.66	+ 0.66	2.25	0.0	14	14	5	12	nw.	Hugh R. Moffet.
Morrison	Whiteside	695	16	55.0	- 4.9	76	18	29	5	36	3.15	- 1.67	0.68	0.0	13	13	11	7	nw.	S. A. Maxwell.
Morrisonville	Christian	638	11	57.4	- 5.3	80	20	32	4	34	8.65	+ 4.88	2.42	0.0	12	16	7	8	sw.	J. D. Lewis.
Mount Vernon	Jefferson	511	16	61.6	- 4.2	85	1	37	14	34	2.61	- 1.38	1.15	0.0	11	15	4	12	s.	Theo. P. Stelle.
Oregon	Ogle	702	1	54.2	.....	78	19	28	5	35	4.65	.....	1.00	0.0	9	8	9	14	w.	Samuel Ray.
Ottawa	La Salle	500	24	57.2	- 3.9	85	21†	30	5	36	5.28	+ 1.05	1.70	0.0	11	10	2	19	nw.	Miss M. M. Harris.
Pana	Christian	692	24	58.8	- 4.1	81	20	33	4	31	6.06	+ 1.62	1.28	0.0	11	21	4	6	nw.	C. W. Sibley.
Peoria	Peoria	609	33	56.4	- 5.3	82	28	35	13	32	4.49	+ 0.23	1.15	0.0	15	14	11	6	ne.	U. S. Weather Bureau.
Pontiac	Livingston	546	8	57.0	.....	83	22†	32	5	36	5.04	.....	1.42	0.0	10	11	11	9	sw.	Geo. Butterworth.
Riley	McHenry	956	51	53.6	- 3.8	75	18†	31	4	33	4.42	+ 0.75	1.25	0.0	13	9	8	14	nw.	John West James.
Rockford	Winnebago	763	18	54.6	- 3.6	77	20	30	5	33	4.76	+ 0.58	1.95	0.0	14	14	4	13	.....	Hosmer C. Porter.
Rushville	Schuyler	670	19	58.2	- 4.7	80	28	34	4	27	6.11	+ 1.68	1.15	0.0	11	6	15	10	s.	H. F. Dyson.
St. Charles	Kane	700	15	54.2	- 5.5	80	21†	29	5†	36	6.43	+ 2.15	1.45	0.0	14	12	16	3	ne.	Dr. Wm. H. Bishop.
St. Peter	Fayette	500	8	59.9	.....	84	20	34	14	33	3.86	.....	1.05	0.0	8	11	13	7	nw.	M. L. Lansford.
Springfield	Sangamon	644	33	58.8	- 4.7	82	28	34	4	29	4.39	- 0.10	0.92	0.0	15	14	5	12	s.	U. S. Weather Bureau.
Streator	La Salle	626	17	56.2	- 4.9	85	21†	31	4†	39	5.13	+ 1.60	1.91	0.0	12	20	8	3	se.	Edw. F. Sweetser.
Sullivan	Moultrie	530	10	58.3	- 4.3	81	20†	32	4	42	6.75	+ 2.06	1.43	0.0	11	12	10	9	sw.	C. A. Corbin.
Sycamore	De Kalb	855	30	54.7	- 3.4	82	22	28	5†	42	4.81	+ 0.62	0.73	0.0	13	16	0	15	sw.	Miss E. J. Davis.
Tilden	Randolph	500	24	61.4	- 3.8	88	22	40	14	30	5.46	+ 1.46	1.81	0.0	13	16	4	11	nw.	Jas. A. Caldwell.
Tiskilwa	Bureau	798	16	56.0	- 5.0	82	21	31	4	35	7.10	+ 2.67	1.71	0.0	14	17	4	10	w.	F. L. Smucker.
Walnut	do	717	19	57.4 ^d	- 4.6	80 ^b	21	32 ^a	4†	35 ^b	4.84	+ 0.35	2.06	0.0	14	11	14	6	ne.	O. C. Nussle.
White Hall	Greene	573	2	58.0	.....	81	28	34	4	34	7.18	.....	1.63	0.0	14	13	6	12	nw.	Dr. R. A. Pritchett.
Windsor	Shelby	681	11	57.8	- 4.6	83	21	31	4†	36	6.32	+ 0.72	1.94	0.0	10	9	11	11	s.	Herbert Rose.
Winnebago	Winnebago	900	23	54.2	- 3.8	78	20	29	14	37	4.73	+ 0.44	1.40	0.0	12	12	10	9	ne.	Frank Osborn.
Yorkville	Kendall	584	23	54.8	- 3.2	83	21	28	5†	40	4.49	+ 0.27	1.00	0.0	11	13	5	12	w.	Herman A. Grimwood.
Zion	Carroll	938	16	55.1	- 4.2	78	19†	29	5	37	3.84	- 0.57	1.98	0.0	7	17	5	9	w.	Robt. F. Gillogly.

- * , * , etc., indicate, respectively, 1, 2, 3, etc. days missing from the record.
† Precipitation included in that of the next measurement.
** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.
† Also on other dates.
† Separate dates of falls not recorded.
† Data are from standard instruments not supplied by the U. S. Weather Bureau.
† Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.
† Estimated by observer.
† Precipitation for the 24 hours ending on the morning when it is measured.
† Precipitation is less than 0.01 inch rain or melted snow.

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2.—Daily precipitation for May, 1910. District No. 5, Upper Mississippi Valley.

		Day of month.																															Total.		
Stations.	River basins.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
North Dakota.																																			
Amenia.....	Red															T.	.70	.10	T.	T.					T.					T.				0.80	
Bottineau.....	Mouse.....	.12														T.	.18	.48		T.	.13	.03			.34					T.	.15	.06		1.70	
Cando.....	Sheyenne..	.30														T.	.30	.11						.21										0.92	
Crosby.....	Mouse.....														T.	.18	.63	.48		.05	.38		T.	T.	.03					.41	.08			2.21	
Devils Lake....	Sheyenne..	.01			T.											.10	.20	.75	.12	T.	.13	.14		T.	.11					.23	T.		.03	0.61	
Donnybrook.....	M. do.....															T.	.28	.30		T.				.33										1.66	
Dunsmuth.....	Sheyenne..	.15			T.											T.	.20	.30		T.				.06					.65					1.56	
Forman.....	"do.....																.36			.18		T.										T.		1.20	
Grafton.....	Red .....																																	.04
Granville.....	Mouse.....															T.	.06	.19		.06	.32				.12					.06	T.			0.71	
Hannah.....	Pembina...	.02															.41	T.		.11	.09				T.	T.				.06	T.			0.71	
Hansboro.....	Red .....	.09														.05	.33	.32			.17	.01			.20	.	T.			.16	T.	.02		1.39
Hillsboro.....	"do.....																.36		.12	.13					.19								.05	0.80	
Lakota.....	Sheyenne..	.01														.18	.19	.41	T.	.04	.20	.01		.09		T.						.03	.10	1.26	
Langdon.....	Pembina...	.21															.04	.33		.02					.08					.07	T.			0.75	
Larimore.....	Red .....	.10															.34	.18	.34		.19								.06					1.21
Libson.....	Sheyenne..				T.	T.										T.	.10	.53	.40						.08					.03	T.	.02		1.16	
McKinney.....	Mouse.....														T.	T.	.85		T.		T.	T.							.25					1.10	
Manfred.....	Sheyenne..	T.			T.											.28	.05	.20		.03	.24			.04										0.84	
Mayville.....	Red															T.	.34		.19	.09					.07									0.69	
Minot.....	Mouse.....	.11															.11	.53		.05	.17	T.			.12					.03			.01	1.13	
Minto.....	Red .....	.17													.07	.58	.77	.27		.07	.03			.14	.01				.07					2.20
Oriska.....	Sheyenne..																.16	.22	T.	.04				.01						.04			.00	0.56	
Park River.....	Red	T.													.08	.33	.05		.02	.18				.02	.06									0.74	
Pembina.....	"do.....	.22														.18	.22	.08			.22			.22			.08			T.	.10		.14	1.46	
Portal.....	Mouse.....																																		
Power.....	Sheyenne..				T.												.28	.31							T.								T.	0.59	
Pratt.....	Mouse.....					.12									.12		.45								.19									0.98	
University.....	Red .....															.06	.12	.28							.01					.10		.03		0.50
Wahpeton.....	"do.....															T.	.46								.11	T.								0.57	
Walhalla.....	Pembina...																																		
Westhope.....	Mouse.....														.10	.03	.90				.33			.01						.02				1.39	
Willow City.....	"do.....																.20	.33	T.	T.				.10							.18			0.89	
Minnesota.																																			
Albert Lea.....	Mississippi..										.15	.20				.10	.40	.75						.85		T.				.05			T.	2.50	
Alexandria[].....	"do.....															.45	.27	.22																1.07	
Angus.....	Red .....														.17	.12	.22				.02			T.	.18	T.					T.			0.71
Bagley.....	"do.....															.03	.22	.04		.14					.28	.42				.17	.01			1.31	
Baudette.....	Rainy.....	T.														T.	.14	.02	.01	.13					.17	.22				.48	.09			1.26	
Beardsley.....	Minnesota..																																		
Beaulieu.....	Red .....																.45	.04		.04	.39				.36	.12				T.	.01			1.41
Bird Island.....	Minnesota..	T.	T.				T.									T.	.02	.07			.35	.06								.04				1.54	
Caledonia[].....	Mississippi..		T.													T.	1.20	.11						.53		.10	T.				.01			1.87	
Campbell[].....	Red															T.	.20	.16			.06				.13					T.				0.52	
Cass Lake.....	Mississippi..															T.	.14	.69			.50											T.		1.30	
Collegeville.....	"do.....														.01						.48													1.39	
Crookston[].....	Red	T.														T.	.12	.10	T.	T.	.19				.06	.12	.02			T.	.05		.04	0.66	
Detroit[].....	"do.....	T.														.11	.32	.18	T.	T.	.03					.06	.12	.02			T.			1.11	
Fairmont (near).....	Minnesota..		.07				T.									T.	.35	.44			.30				.16	.26	.05			.75				2.25	
Faribault.....	Mississippi..										.10					T.	.31	.61				.13	.47	.01						.02	.01		.06	1.54	
Farmington.....	"do.....	T.														T.	1.07													.07				0.63	
Fergus Falls.....	Red				T.											.03	.36	.10	T.							.11	.01							0.95	
Fort Ripley[].....	Mississippi..															T.	.95	T.														T.		0.87	
Foston.....	Red .....															.02	.18	.05	.04	.10					.25	.14				.05	.04			0.95
Glencoe.....	Mississippi..															T.	1.45				.30	.20			T.								.20	2.15	
Grand Meadow.....	"do.....										T.						.06	.66	1.82				T.	1.03		T.	T.			.13				3.70	
Hallock.....	Red .....		.05												.03	.25	T.		.15	.35			.03	.35					.10			T.	1.45	
Halstad.....	"do.....	T.														.14	.19	.07	.02	.26					.04	.03							0.75		
Hinckley.....	St. Croix....																				.22	.13				.10								0.45	
International Falls.....	Rainy.....	T.	.05												.12		.05			.07					.33	.50				T.	.20			1.32	
Kelliher.....	Red																																		
Lake Crystal.....	Minnesota..																																		
Leech Lake Dam.....	Mississippi..										.01						.02	.45	.41	.02	.26				.10	.17				.07	.02			1.53	
Little Falls.....	"do.....																																		
Little Fork.....	Rainy.....																									.49	.16								0.67
Long Prairie.....	Mississippi..															.70					T.				.13									0.97	
Lynd (2).....	Minnesota..	.23				.06					.18							.61			1.16	T.												2.24	
Mankato[].....	"do.....																	.55	.30					.44								T.		1.29	
Mapleplain.....	Mississippi..																																		
Milaca.....	"do.....																																		
Milan.....	Minnesota..														.03	.14	.50		1.06	.03														1.76	

TABLE 2.—Daily precipitation for May, 1910. District No. 5—Continued.

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Minnesota—Cont'd.																																	
Winona.....	Mississippi.																.75	.79				1.33	.05	.03	.02					.01			2.98
Worthington||	Des Moines		.35					.13	.48			T.	.18				T.	.60				T.											1.74
Zumbrota.....	Mississippi.																T.	.55	.78			T.	.92	T.						T.			2.25
South Dakota.																																	
Milbank.....	Minnesota.						.03										.08	.32				T.			T.					T.			0.43
Wisconsin.																																	
Antigo.....	Wisconsin.																																
Barron.....	Chippewa.																T.	1.32	.15			T.	*	.55		T.			.15			2.17	
Beloit.....	Rock.		.69						.20			.03				.05		.56			.06		1.06	.36	.13				.70			3.84	
Brodhead.....	do.			.55				.06				T.					.15	.57				T.	.30	.31	.20				.20	.45		2.79	
Burnett.....	do.		.17					.09									T.	.53	.03			.14	.24	.09	.22	.03	T.		.07	.34		1.95	
Delavan.....	do.			.57				.15		.01							T.	.38	.04				1.37	.14	.60				.81			4.07	
Dodgeville.....	do.																																
Downing.....	Chippewa.																.01	.92				.45	.20	T.	.01	.10						2.69	
Eau Claire.....	do.																.15	.92				.12	.50	.33		T.	T.		.06			3.08	
Ellsworth.....	Mississippi.																																
Glidden.....	Chippewa.									T.							1.40	.12	.07		.15	.45		.12	.05					.05		2.51	
Grand Rapids||	Wisconsin.																.29	.60	.20			T.	.41	T.	.01					.04		1.63	
Grantsburg.....	St. Croix.																T.	.75				.18	T.					T.				0.93	
Hancock.....	Wisconsin.																.10	.52			.22	.10	.02	.08					.02	.15		1.21	
Hatfield.....	Black.																.27	1.17				.43	.27						.06			2.20	
Hayward.....	St. Croix.									T.							*	2.45	T.			T.	.25	.20					.30			3.20	
Hillsboro.....	Wisconsin.		T.														.85	.25				.40	T.						.05			1.55	
Koepenick.....	do.																1.13	T.	.19	T.		.40	.10	T.					T.	.12	T.	1.94	
LaCrosse.....	Mississippi.		T.													.02	.59	.44				.55	.01	T.					.02			1.63	
Lake Mills.....	Rock.		.56	.02				T.	.11			T.					T.	.74			.03	.64	.47	.26		T.		.06	.16	T.		3.05	
Lancaster.....	Mississippi.		.74							.09							.10	.55	1.00		.18	.59	.04	.10				.13	.34			3.86	
Long Lake.....	Wisconsin.									.05							.12	1.60	.03	.06	.07	.09	.17	.08	.15			.04	.03	.01		2.50	
Madison.....	Rock.		.64					T.	.11	T.						.04	.04	.45			.01	.44	.30	.32	.09		T.		.38			2.82	
Mather||	Wisconsin.																.01	.74	.23				.44	.02	.10				.02	T.		1.65	
Mauston.....	do.																.22	.75					.20						.18			1.35	
Meadow Valley.....	do.																.30	.73				.21	T.	.25								1.49	
Medford.....	Black.																*	2.30				.65	.30	.40		.15			.05			3.85	
Merrill.....	Wisconsin.																.20	1.20				.13			.04	.48			.02			2.07	
Minocqua.....	do.																.20	.30	.10		.15	.25	.30	.07	.05			T.	.07			3.49	
Mondovi.....	Mississippi.																.15	1.64	.01			.78	.19	.11		.02		.10				3.00	
Mount Horeb.....	Rock.		.02	.95						T.	.02						.29	.64	T.		.33	.16	.64	.36				.02	.24			3.67	
Muscola||	Wisconsin.				.12												.08	.96	.12			.28	T.					.58				2.30	
Neillsville.....	Black.																.40	.50	.23				.76									1.89	
New Richmond.....	St. Croix.																.35	.60														1.75	
Osceola.....	do.																T.	.90	.40		.03	.23		.03				.05				1.64	
Portage.....	Wisconsin.		T.														*	1.29			.50	.27	.02					*	.60			2.78	
Prairie du Chien||	Mississippi.			.14									.08				.08	.82	.06			.12	.34		T.		.06	.36				3.06	
Prentice.....	Chippewa.																1.10	.62	T.		.11	.52	T.	.12	.17			.13	T.	T.		2.77	
Rhineland.....	Wisconsin.																.11	.65	.08		.04	.11	.14	.06	.12			.04	.09	.02		2.46	
Sauk City.....	do.																																
Shullsburg.....	Mississippi.		.76					.09					.14				.31	.54			.45	.47	.25	.04		.33		.12	.20			3.70	
Solon Springs.....	St. Croix.																.80	.60			.10	.20					.30					2.00	
Spooner.....	do.																*	2.00	T.		T.	.25		.04	.06			.09	T.			2.44	
Stanley.....	Chippewa.																.24	.22			.13	.32	.34	.03	.01	.04		.03				3.38	
Stevens Point.....	Wisconsin.																T.	.67				*	.70	T.								1.37	
Valley Junction.....	do.																.31	.89			.39	.28	.11	.08				T.	.08			2.14	
Viroqua.....	Mississippi.		T.														.27	1.05			.34	.15		T.	T.			.02				1.83	
Vudessare.....	Wisconsin.								T.		T.						.03	1.00	.30	.03	T.	.10	.44	.04				T.	.10	.04		2.10	
Watertown||	Rock.			.05	.48				.20								T.	.08	.50		.10	.14	.50	.40	.07				.32	.03		2.87	
Waukesha.....	Fox.		.35						.18								.32	.83			.32	.83				.12		.40				3.25	
Wausau.....	Wisconsin.																.89					.23		.07	.03			.22	.10			1.54	
Weyerhaeuser.....	Chippewa.																.06	1.94	.07		.07	.20	.28	.04	.04			.07	.04			2.81	
Whitehall.....	Mississippi.																																
Iowa.																																	
Albia||	Des Moines		.30	.55	.25		.10	.35	.51			.11					.23	.11				.07	.91	.05					.05	.40			3.99
Algona.....	do.											.14	.70				.02	.30	.15			T.	.62						.07				2.00
Alta||	Raccoon.		T.	.06	T.		.46	.35				.31					T.	.10	.77			.75	.15					T.	.02				2.97
Amara.....	Iowa.			.48				.33																									

TABLE 2.—Daily precipitation for May, 1910. District No. 5—Continued.

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Illinois—Cont'd.																																	
Oregon.....	Mississippi.....		.85									.35					.40					.65	.85	.25		.10				.20	1.00		4.65
Ottawa.....	Illinois.....	.35	1.70					.12	.15			.15					.47	T.				.65		.72	.06	.15				.76			5.28
Pana.....	Mississippi.....	.04	.52	.57				.78	.01			1.28	T.				.02	.24				.25	.45	.01	1.24					.65			6.06
Peoria.....	Illinois.....	.30	.91					.67	.01		.03	.12				.13	.80			.06	.03	.13	.39	.54		T.			.14	.23		4.49	
Pontiac.....	do.....	1.42	.79					.17	.31			.27					.30					.04		1.10				.08			.56		5.04
Riley.....	Mississippi.....		.75					.03	.08			.05					.40					.04	.66	.54	.46	.02	.04			.10	1.25		4.42
Rockford|||	do.....		.17	.41					.03	.01		.06				.06	.28	.27			.01	1.95	.41	.09	.05					.96			4.76
Rushville.....	Illinois.....	.40	.72					.92	T.	.04	T.	1.15				.32	.52		.46					.64	T.				.91	T.	.03		6.11
St. Charles.....	do.....	.63	1.45					.02	.53			.17					.41					.03	1.22	.42	.64	.07	.18	.20		T.	.66		6.43
St. Peter.....	Mississippi.....	T.	.05	.35				T.	.90			.70					T.	.20				.11	T.	1.05						.50			3.86
Springfield.....	Illinois.....	.09	.39					.13	.73	.03		T.	.92			.06	.19		.04			.18	.01	.52	.35				T.	.74	.01		4.39
Streator|||	Illinois.....	.26	1.91	.09				T.	.15	T.		.37	T.				T.	.26	.16			.03	.04		.76	.10				1.00			5.13
Sullivan.....	Mississippi.....	.06	.93	.32				1.17	.14			.85					.08					.55	.65		1.43					.57			6.75
Sycamore|||	do.....	.70	.73	.40				.20				.20					.20	.25				.07		.61	.50	.25		.15		.55			4.81
Tilden.....	do.....	.23		1.43	.43	.01						.43	.04			T.	.12	.30				.41		.04	1.81			.03	.18		T.		5.46
Tiskitwa.....	Illinois.....	.53	1.71					.05	.53			.25				T.	.25	.81				.05	1.23	T.	.62	.14	.13			.10	.70		7.10
Walnut.....	Mississippi.....	* 2.06						.04	.20			.31				* 24	.48		T.			.05	.19	.20	.37		.09			.02	.59		4.84
Warsaw|||	do.....	2.99	.13					1.15				1.47				.24	.02			.26			.30	.15					.41	.69			7.81
White Hall.....	Illinois.....	.05	1.16	.47			.01	1.57	.06			.80				.03	.15	.35				.04	T.	.01	1.06					1.40			7.18
Windsor.....	Mississippi.....	.02	.78	.49				1.15	.05			.85					.06					.40			1.94					.58			6.32
Winnebago.....	do.....		.66					.03	.03			.08				.09	.52					1.40	.33	.25		.20			.43	.71			4.73
Yorkville.....	Illinois.....	.50	.50					.05	.20			.50					.20					1.00	.25	.73		.04				.50			4.49
Zion.....	Mississippi.....	.05						.03			T.					T.	.30			T.		.02	1.98	.86	T.		T.		.60				3.84

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 5, Upper Mississippi Valley.

Date.	North Dakota.												Minnesota.															
	Bottineau H.		Devils Lake.		Lisbon H.		Minot H.		Pembina H.		Collegeville.		Crookston H.		Grand Meadow.		Montevideo H.		Moorhead.		New Ulm H.		Pine River Dam.		St. Paul.		Winnipegash.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	49	26	47	30	49	34	51	32	42	22	62	45	45	32	71	37	65	39	54	32	74	39	56	40	67	42	59	40
2	58	37	55	36	56	39	62	28	50	24	51	32	50	28	55	36	56	35	52	25	54	37	52	27	53	37	50	26
3	65	32	62	35	63	25	65	34	72	32	59	33	63	37	60	23	62	27	64	28	64	29	58	24	58	32	58	25
4	65	33	65	39	66	26	68	39	78	41	63	35	66	34	65	25	66	35	66	32	69	34	64	27	65	40	46	35
5	54	40	56	42	60	40	53	49	63	42	63	40	65	43	65	30	69	40	61	42	67	38	65	28	68	40	46	32
6	59	31	61	34	59	43	56	42	62	39	65	48	66	40	58	44	59	45	66	43	59	47	68	35	65	52	70	38
7	70	30	65	36	63	25	71	40	62	38	70	44	68	37	67	41	71	44	68	34	72	45	69	38	72	48	69	44
8	69	39	67	43	70	37	73	48	60	40	71	47	68	45	75	36	82	38	70	38	76	37	69	34	73	45	66	42
9	62	28	65	32	70	38	70	34	58	38	69	47	67	36	70	36	73	42	68	38	71	39	68	35	69	51	62	43
10	58	35	57	30	63	40	62	35	41	28	63	47	54	39	70	49	73	52	58	36	72	49	59	35	69	46	57	43
11	54	26	51	23	56	32	57	35	40	22	57	32	50	28	60	34	65	33	54	27	66	37	58	32	58	36	53	31
12	59	29	56	21	59	25	77	28	52	20	57	33	53	25	61	29	63	30	56	24	62	33	53	34	60	35	54	34
13	73	31	69	30	68	20	77	33	71	28	64	35	63	28	64	30	68	29	66	27	68	33	63	31	64	37	62	31
14	76	38	80	52	81	40	79	50	79	39	73	43	58	35	70	34	80	39	81	40	79	37	75	34	74	40	71	36
15	54	48	56	47	57	48	54	48	52	32	68	50	69	48	68	43	56	45	64	46	69	49	70	46	68	51	69	46
16	51	37	50	34	59	39	51	37	52	49	55	47	60	48	65	42	67	50	55	45	58	50	53	46	55	48	54	47
17	72	26	71	31	70	37	73	31	68	29	59	47	68	38	52	41	65	43	68	38	60	47	60	46	61	48	58	45
18	53	36	52	36	89	37	58	41	41	34	79	48	57	38	57	47	84	43	77	43	81	43	65	48	79	46	60	48
19	52	35	60	35	72	47	64	35	48	33	79	50	62	43	75	42	85	55	75	44	82	53	80	46	77	54	63	44
20	55	29	51	33	54	37	57	29	52	32	59	50	50	38	74	49	54	45	52	36	65	56	58	39	67	50	56	44
21	67	31	61	36	65	29	68	38	71	30	54	39	60	32	72	53	55	40	64	31	51	46	57	35	50	45	61	35
22	60	35	70	43	76	32	69	41	58	31	68	38	73	40	56	46	70	40	74	38	61	42	68	32	63	42	70	35
23	62	37	60	40	64	41	67	41	51	40	70	47	56	43	55	42	71	46	60	43	70	42	63	48	68	45	65	48
24	63	35	56	36	58	36	65	36	52	36	56	43	55	41	67	40	61	43	56	40	60	44	57	47	57	46	56	42
25	65	32	62	31	63	33	69	30	74	30	65	43	64	33	60	38	66	38	64	34	65	41	65	31	64	42	66	34
26	76	41	75	40	74	29	75	38	78	46	69	44	72	42	70	41	75	38	74	38	75	36	72	33	73	42	70	34
27	84	47	81	54	76	48	84	53	78	50	72	49	79	52	72	52	78	50	78	49	78	43	75	32	74	48	72	47
28	58	52	62	36	75	56	57	53	63	52	73	55	72	58	65	49	78	56	76	51	75	53	68	43	67	55	70	55
29	58	32	59	38	69	42	63	38	51	35	72	40	53	34	64	45	73	47	65	40	72	43	59	36	63	46	66	36
30	72	38	70	34	72	35	76	38	79	28	68	37	66	32	67	40	74	37	70	35	73	40	65	44	69	44	65	37
31	69	40	69	41	73	45	74	51	62	40	69	47	67	40	70	36	74	43	72	45	74	43	68	48	71	45	68	44
Mean	62.8	34.4	62.0	36.1	65.9	35.9	65.9	38.8	69.2	36.0	65.2	43.1	61.9	38.2	65.2	39.4	68.9	41.5	65.4	37.5	68.5	42.1	63.9	37.9	65.8	44.5	62.8	39.4

Date.	Wisconsin.										Iowa.																	
	Delavan.		Eau Claire.		La Crosse.		Madison.		Mauston.		Spooner.		Wausau.		Algona.		Cedar Rapids H.		Charles City.		Davenport.		Des Moines.		Dubuque.		Keokuk.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	65	39	70	37	69	39	64	42	68	34	68	40	64	34	71	38	72	42	70	38	66	45	70	43	68	42	69	48
2	54	36	61	37	58	40	53	33	64	40	50	31	64	39	61	39	54	46	55	35	57	40	61	42	58	37	65	44
3	54	31	60	26	58	32	50	33	57	28	56	22	54	26	60	24	56	37	59	28	56	40	56	37	55	36	56	42
4	54	28	65	30	60	31	54	36	60	28	61	25	57	26	64	32	60	35	62	28	58	38	59	38	58	36	58	38
5	57	25	68	30	65	34	59	37	64	29	68	35	63	31	62	38	62	35	61	32	59	38	58	42	60	36	61	37
6	60	31	67	34	62	45	58	41	60	35	68	43	65	40	54	45	61	38	57	46	61	42	54	44	60	43	59	46
7	54	35	70	42	65	46	55	43	61	32	71	41	66	36	65	43	54	45	61	47	52	45	54	44	57	45	55	44
8	60	44	76	35	75	44	67	45	70	40	73	42	72	36	74	38	73	46	74	43	67	47	72	45	71	50	68	44
9	72	46	71	49	70	49	67	52	68	50	65	44	71	48	75	48	77	49	71	48	75	51	76	52	72	51	75	51
10	70	46	70	41	73	44	69	50	70	40	63	43	67	40	76	49	79	51	70	48	76	51	78	46	71	52	78	50
11	61	39	60	35	60	41	59	40	63	36	56	30	64	32	59	40	62	50	59	41	59	46	62	48	61	47	71	51
12	60	32	62	34	61	39	56	40	60	29	57	30	56	31	60	34	61	41	60	37	60	40	61	41	59	40	59	44
13	58	31	65	31	63	37	58	37	67	36	58	29	56	30	65	32	63	38	62	34	60	39	65	36	61	39	63	40
14	63	25	73	32	71	36	63	34	60	28	70	35	60	38	76	36	70	36	71	33	66	39	71	39	66	39	67	45
15	67	41	71	47	69	49	64	42	67	45	70	51	67	42	66	46	64	39	66	47	63	48	64	48	65	48	61	50
16	67	41	63	47	57	49	62	48	62	45	57	48	66	46														

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 5—Continued.

Date.	Hannibal, Mo.		Laporte, Ind.		Illinois.															
					Calro.		Greenville.		La Salle.		Monmouth.		Mt. Vernon.		Peoria.		Springfield.		Winnebago.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	69	50	66	43	79	66	76	57	61	44	66	46	85	61	68	45	73	48	69	42
2	69	42	58	38	79	67	79	57	55	39	63	41	80	61	58	41	68	41	57	37
3	57	41	51	38	73	47	66	42	55	38	58	39	55	44	56	38	59	41	57	33
4	59	40	53	34	59	49	63	37	56	34	60	32	62	40	58	36	60	34	57	30
5	61	41	60	35	65	45	65	38	59	34	63	30	65	40	62	37	62	36	60	30
6	55	46	63	38	57	49	59	51	63	38	63	42	59	48	64	42	60	47	62	33
7	48	44	53	43	67	51	55	46	54	44	57	44	65	48	52	44	52	45	56	40
8	65	45	57	48	55	51	52	46	59	47	66	45	52	48	57	48	55	47	63	42
9	76	49	66	45	77	49	76	48	73	49	76	47	80	46	73	44	77	48	73	45
10	78	51	73	46	78	58	80	55	74	49	79	43	80	50	76	44	78	55	71	45
11	64	46	63	39	85	56	68	52	57	45	75	48	78	60	60	42	64	48	60	44
12	60	43	56	36	67	50	66	42	60	41	59	41	68	43	59	40	62	44	61	35
13	63	39			66	46	67	41	59	39	59	38	66	41	57	35	62	42	61	33
14	66	39			65	48	67	42	65	35	69	34	68	37	65	37	65	39	66	29
15	56	51			64	50	68	46	64	45	64	44	67	42	63	45	61	46	61	43
16	69	51	69	43	71	55	70	52	70	53	68	49	72	54	68	51	69	52	69	49
17	62	52	63	52	73	58	69	55	60	53	65	51	73	55	59	52	63	52	64	52
18	73	46	73	46	76	53	77	46	76	48	79	44	78	45	74	45	75	49	77	42
19	74	50	75	50	72	57	78	50	75	53	78	49	76	46	75	52	75	54	77	48
20	78	60	76	54	77	64	83	60	76	58	82	56	83	60	77	59	79	61	78	55
21	81	66	80	48	73	62	76	62	82	58	87	59	82	63	77	59	78	65	75	54
22	71	59	81	56	76	60	82	62	79	58	71	59	81	60	78	60	76	60	77	56
23	72	56	63	46	74	62	70	59	65	54	74	56	77	57	69	57	68	57	66	50
24	69	51	67	50	67	57	73	54	67	51	70	48	73	54	68	47	70	54	64	48
25	68	45	65	44	74	55	72	49	61	45	69	44	73	46	66	43	69	49	62	43
26	69	44	60	39	74	58	75	50	67	40	73	41	74	53	69	40	69	48	64	38
27	68	53	67	39	73	59	70	48	71	42	74	40	72	47	72	41	71	45	70	37
28	82	59	76	43	81	60	82	57	79	49	79	52	83	54	82	54	82	56	77	46
29	75	60	74	57	84	66	80	62	70	55	74	52	84	59	71	58	76	59	68	52
30	73	53	64	43	79	61	75	54	64	49	71	49	75	61	69	48	72	43	61	44
31	71	46	51	39	75	57	74	47	68	43	73	45	61	53	69	42	71	50	67	39
Mean	67.8	49.0	65.0	44.0	72.1	55.7	71.4	50.5	65.9	46.1	69.8	45.4	72.5	50.8	66.8	46.0	68.4	49.2	66.1	42.4

Climatological Data for May, 1910.
DISTRICT No. 6, MISSOURI VALLEY.

MONTROSE W. HAYES, District Editor.

GENERAL SUMMARY.

The weather was unusually cool in the eastern portion of the Missouri watershed during the month of May and it was dry in the central and northern portions.

All but one of the barometric depressions moved easterly across the southern or central part of the district, while all of the high pressure areas came into the district from the northwest and either passed eastward over the northern States or spread southeasterly. As a result of these movements northerly winds predominated and heavy showers occurred in the extreme southern portion of the watershed.

The sunshine was above the normal in the northwestern States and below the normal in the southeastern States. The prevailing wind was from the west in Montana, Wyoming, and Colorado, from the northeast in Kansas, and from the northwest in the other States. The average wind movement was slightly less than the normal in Montana and Nebraska, and above in North Dakota.

TEMPERATURE.

The average temperature was slightly above the normal in the mountain districts, but it was from 3° to 5° below the normal in the eastern part of the watershed. It was the coolest May in Missouri in 22 years, with one exception, the coolest in Kansas in 23 years, with two exceptions, and the coolest in South Dakota in 21 years, with three exceptions. The month was only slightly warmer than April in Wyoming, and the maximum temperatures were higher in nearly all sections in April than in May.

The highest temperature reported in May was 96° at Farnsworth, Kans., on the 31st. The maximum in Iowa was only 87° and in Wyoming only 90°, but in each of the other States it was between 90° and 96°. The lowest temperature was 8° at Lake Hotel, Yellowstone National Park, on the 2d. The lowest in Missouri was 32°, in Kansas, 24°, and in other States below 20°. Frosts were general and frequent, except in the extreme southeast, and some damage resulted. In South Dakota heavy to killing frosts were reported as late as the 25th.

PRECIPITATION.

The precipitation was above the normal in Colorado, Kansas, Missouri, southern Iowa, and Nebraska and was below the normal in other sections. In North Dakota the precipitation was less than one-third of the normal amount for May, and some damage from lack of moisture occurred in this State as well as in South Dakota and Iowa. On the other hand, farm work was delayed and there was considerable damage from washing and flooding in Missouri and eastern Kansas, because of the heavy and frequent showers.

The greatest monthly precipitation was 10.92 inches at Kansas City, Mo. It was 10.87 inches at Clay Center, Kans., and 8.60 inches at Garneil, Mont. The greatest amount of precipitation in any 24 hours was 6.00 inches at Garneil, Mont., on the 15th. In Montana the rains were more favorably distributed through the month than is usual for May and as a result nearly all of the moisture was absorbed by the soil. In South Dakota there have been but 3 years in the past 20 when the average precipitation for May has been less than this year.

The heaviest monthly snowfall was 48.6 inches at Corona, Colo. The greatest snowfall in Wyoming was 37.0 inches, in Montana, 22.0 inches, and in the Black Hills district in South Dakota, 27.3 inches. Only a trace of snow fell in Iowa, Kansas, and Missouri. Much of the precipitation fell as snow in the mountains of Wyoming. The snowfall was quite heavy in the mountain districts of Montana from the 14th to the 16th,

causing a slight delay in the operations of the St. Marys Reclamation Project, and some loss to sheepmen in the State. On the East Gallatin River in Montana, there was no snow at the close of the month at the 8,000-foot level, except in drifts, and the streams were very low. Snowstorms were frequent in Colorado during the opening days of the month and from the 15th to 21st, with the heaviest falls on the 1st, 2d, 16th, and 21st. The snowfall at Frances, Colo., on the 21st amounted to 18.0 inches.

RIVERS.

The flow of water in the rivers in this district was generally less than the normal for May. The deficient flow in the headwaters of the Missouri River was due to the deficient snowfall in the mountains during the winter, the very warm March which melted the snow on the lower levels, and the deficient precipitation in April and May.

Heavy rains in Missouri and eastern Kansas on the 6th and 7th caused a sharp rise in the Missouri River below Kansas City, in the Osage River and its branches, and in the lower Grand River. The Grand River just reached the flood stage at Brunswick, Mo. The Missouri River rose to within 1.5 foot of flood stage at Boonville, Mo.

The Marais des Cygnes River, the main branch of the Osage River, was 0.3 foot above the flood stage at Ottawa, Kans., at 6 p. m. of the 8th, but the flood stage was not quite reached either at Osceola or at Bagnell on the Osage River. A branch of the Osage called the Grand River, which flows in near Warsaw, Mo., was reported by the cooperative observer at Warsaw to be higher on the 8th than ever before known. It caused considerable damage to crops in its own valley as well as in the Valley of the Osage River.

MISCELLANEOUS.

The weather was favorable for farm work, mining, engineering, and railroad work in all the northern part of the Missouri Valley, but very unfavorable in the extreme southern part of the district, especially for farm work, because of the heavy rainfall. The section director in charge of the Missouri Section reports that the month was decidedly unfavorable for most outdoor occupations and for the dry goods and clothing business.

Vegetation was very backward, especially in the eastern half of the district. It was much too cold for corn and there was far too much rain in Missouri and eastern Kansas. Farther north it was too dry and, because of the dry soil, cold weather, and in places poor seed, corn failed to germinate and much replanting was necessary. Many fields in Iowa were replanted three times. Some damage was caused by frost during the month.

Thunderstorms were not so frequent or severe as is usual in May.

No unusual atmospheric phenomena were observed during the transit of Halley's comet.

DRAINAGE NOTES.

The Yankton and Clay county drainage ditch was completed in January. It starts 2 miles west of the east Yankton County line, runs east into Clay County, and then southeast and empties into Vermilion River. The distance is between 14 and 15 miles, and the area benefited by this ditch is 39,440 acres and the cost nearly \$100,000. There is a lateral running west from the starting point of the Yankton-Clay county ditch for about 2 miles which benefits about 1,000 acres. This is called the Volin Lateral and runs into the Yankton-Clay county ditch.—Observer, Weather Bureau, Yankton, S. Dak.

THE WORK OF THE WEATHER BUREAU AND ITS RELATION TO ENGINEERING.

By J. WARREN SMITH, M. S. Read before Engineers' Club of St. Louis, April 20, 1910.

Engineers are oftentimes vitally interested in temperature and wind records. But as both temperature and wind conditions are fairly uniform over large areas it takes but a few points of observation to establish general and satisfactory values.

The temperature of a locality depends upon its latitude, altitude, and prevailing wind direction. Wind values are influenced by the general circulation of the atmosphere and the topography of the country.

For all practical purposes we may consider the same temperature and wind values in southern Ohio as in central Missouri, for example, and can calculate that the same wind and temperatures will have the same effect upon construction work or manufacturing or advance of vegetation in one place as the other.

This is not true of rain or snow, however, and especially of the movements of the water after it has been precipitated. The meteorologist may be wrapped up in his study of the movements of aqueous vapor in its grand meteorological cycle, precipitation, evaporation, condensation.

The climatologist may spend his time with the relation between the weather elements and the latitude and topographic features.

The engineer, on the other hand, wants to know where the water falls, how it falls (that is, the character of the precipitation and rate of fall), and above all where this water is going and how it is going to get there, and not only that but what is going to happen while it is on the road.

He may work out some very pretty theories based upon the topography, temperature, prevailing winds, etc., to answer these questions, but nothing in the world will answer them correctly, but the actual observations. And the problem must be worked out anew for each individual drainage area and parts of drainage areas.

The problems of the hydrological engineer especially, are problems of run-off, evaporation, precipitation.

Run-off.—Some valuable studies have been made of this complex subject, but each river basin is a problem in itself, and while we may establish some very general relations like Newell's 35 to 47 per cent of the rainfall (Water Supply and Irrigation Paper No. 80), the careful engineer will give each case very thorough investigation.

The Weather Bureau proposes to assist in the solution of the run-off question by publishing the daily river gage readings and stream-flow measurements in the MONTHLY WEATHER REVIEW, beginning with January, 1911.

To be sure, the river gage readings have been published by the Bureau for a good many years, and the stream flow figures have appeared in the Geological Survey annual reports, but in both cases the data have appeared many months after the observations have been taken. But now they will be placed before the engineers from month to month, and in the same volume with the figures showing precipitation of the drainage area.

Evaporation.—It is not necessary to tell a body of men like the St. Louis Engineer's Club that the importance of determining just what the real evaporation from water supply and irrigation reservoirs is can hardly be overestimated, especially in arid regions.

In some instances reservoirs built at large expense are nearly or quite dry during most of the year, because the builders did not know the evaporation values.

It has been estimated that the evaporation in southern Arizona is about 6 feet a year. If this is true the loss of water from evaporation from a reservoir like the Roosevelt reservoir, covering 16,320 acres, would be sufficient to irrigate 48,960 acres of land.

After the break in the Colorado River had been closed and it was known that the great body of fresh water in the Salton Sink, containing in May, 1907, 440 square miles of surface area, must be practically dried up in 10 to 12 years by evaporation, it was determined to take the opportunity to study evaporation in the arid regions on a large scale.

After a board of conference had visited the Salton Sea region, the work of investigation was placed in the care of the Weather Bureau, and Prof. Frank H. Bigelow was put in charge.

Professor Bigelow found that when the results from different evaporation formulas were brought together the constants did not agree. He thought it wise then to determine the cause for the discrepancy and to ascertain the correct formula if possible.

Consequently he established 5 towers 40 feet in height in and about the Reno, Nev., city water supply reservoir for the purpose of making a preliminary study. Evaporation pans were located at different elevations on these towers and pans were located at different points in the reservoir. Twenty-nine pans were distributed in this way and observations made every 3 hours.

From these observations Professor Bigelow determined that a vapor blanket always overlays any body of evaporating water, and largely controls the evaporation from water surfaces and irrigated fields.

At Reno this vapor blanket seemed to have a depth of 40 feet over the city reservoir, but it will vary with the size of the sheet of water and the climate in which it is located. He states that in dry climates it will overspread the water laterally from 300 feet to one-fourth mile, according to the size of the water area. In moist climates it will be deeper and more extensive.

In the arid regions of the West it seems probable that this vapor blanket conserves about three-eighths of the water that would otherwise be lost by evaporation, but this rule may not hold true in other climates.

It was determined that if the water evaporated between 7:30 a. m. and 10:30 a. m. at Reno in the summer time be multiplied by 8 the vaporation for the 24 hours of the day will be very closely determined.

Professor Bigelow worked out a very satisfactory formula from these observations and has now attacked the larger problem of the Salton Sea. Observations were opened in March, 1909, at 5 points about the Salton Sea, and simultaneously stations were established at 12 other points in the West and 5 east of the Mississippi River.

Hence it seems that it will not be long before the Bureau can place very valuable data and formulas in the hands of engineers for determining the evaporation from storage reservoirs and watersheds in any part of the country.

Precipitation.—A vast amount of rain and snowfall data have been accumulated during the past 25 or 50 years in this country. Much of the information is not available, to be sure, and yet my experience is that comparatively few engineers appreciate the large amount that is available or know where to look for it. Every few days engineers will come into our office, and, after seeing the precipitation figures that we can furnish them, say that they never dreamed that so much information could be had.

Meteorological observations began at a few places on the Atlantic coast in the 18th century and at a few points west of the Appalachian Mountains early in the 19th century. Army post surgeons were among the first systematic observers.

Later the Smithsonian Institution encouraged voluntary observations, and finally in 1871 the United States Government began its official meteorological records with its organization that has since developed into the splendid weather service that we have to-day.

There are now about 200 stations, at which nearly all the meteorological elements are being noted regularly by self-

recording instruments. Among the most important of these from the engineer's point of view is the self-recording rain gage.

At a few stations in the northern part of the country the exact rain and snow fall is recorded to the one-thousandth part of an inch, as it falls. At most of the other stations the instruments record every one-hundredth of an inch of rainfall. The duration and intensity of fall of every summer thundershower that passes over the station is accurately shown as well as the rate of fall of the more moderate soaking spring rain.

In addition to the regular stations, which, of course, are widely scattered, there are now about 3,600 cooperative observers, who are equipped with reliable maximum and minimum thermometers and standard rain gages. There are 100 of these cooperative stations in the State of Ohio and nearly that number in Missouri. In California the daily precipitation observations are carefully made at no less than 307 different points.

The results of these observations have previously been published in monthly form, each State in a bulletin by itself. In order to get the rainfall for any station one would need to go through a great many reports. Recently, however, the precipitation data over the limited areas have been compiled and published in a series of separates. The United States has been divided into 106 districts and all the precipitation data in each district, together with the average temperature and wind conditions, published in a single report.

Besides the general discussion and climatological tables these reports contain valuable notes, furnished by the Geological Survey, concerning the water power of the district under consideration. Up to date not quite one-third of the publications have been issued, although all are in the process of preparation. Engineers wishing to know the precipitation over any part of the United States should write the Washington office of the Weather Bureau and ask for the latest publication covering the information. If the separate for that section is off the press it will be sent at once.

Heretofore these cooperative stations have been largely located in the fairly thickly-settled farming districts, and they have been very scattering in the more remote mountain regions. Yet the recent interest in the development of water power and supply reservoirs has brought a special demand for a knowledge of the amount of rain and snow available in the mountains and valleys near the headwaters of the large main streams. And since it is the snow accumulated in drifts in the mountain ravines or packed in forests which is the real source of the water supply used for irrigation, it became necessary to give special attention to the amount of snowfall in the high levels of the mountains of the West.

This was brought about through the cooperation of the United States Weather Bureau, United States Forest Service, and the United States Bureau of Plant Industry, of the Department of Agriculture, and the Reclamation Service and the Water Resources Branch of the Geological Survey, of the Interior Department. This inter-Bureau cooperation plan went into effect July 1, 1908.

The problem of snowfall has been attacked by the establishment of a large number of snow bins throughout the mountain States, together with tree snow scales in the valleys and ravines. Army scouts, forest rangers, guides, stage drivers, travelers on circuits, and all others of like character have been pressed into service to determine the actual snowfall in the first place and then the extent of drifting and packing in the ravines and gulches, and the depth from time to time in the forests and opens. In fact to be able to tell at any time just how much water is available for irrigation and reservoir purposes and to solve the question of when it may be expected to come down the streams.

All this the Weather Bureau is doing and it is now placing the daily rainfall data before the engineer in monthly form by drainage areas instead of by States as formerly.

The country has been divided into 12 large drainage districts and all the precipitation of each district is published in one table, beginning in July, 1909. Separates are issued for each district covering the climatological data, and special papers discussing climatic and water flow topics. All the separates are then bound together and published as the complete MONTHLY WEATHER REVIEW.

Any person can obtain the separate for any particular district, or the complete REVIEW regularly by making application to the District Editor or the Chief of the Weather Bureau at Washington.

As editor of the Missouri drainage area I wish particularly to solicit items and articles of interest from the members of this Club touching on this great problem of Water Resources and Water Conservation.

I wish to commend to your attention the articles that have already appeared in the REVIEW and which I am sure are worthy of your consideration.

The November number for example contains a paper upon the relation between the precipitation, run-off, and discharge in the Tallahatchie drainage district in Louisiana, another on the hydrography of the South Palouse River, Washington, and another upon important problems in climatology.

Some of the papers in the December number are: The effect of drainage work in Northern Iowa on the flood stages of the rivers, by A. Marston, C. E.; The United States Weather Bureau in the work of the engineer, by J. A. Ockerson, of this Club; The agricultural engineer and the Weather Bureau, by Thos. H. Means; and the Rainfall of the Hetch Hetchy Valley, by Prof. A. G. McAdie, of San Francisco.

Our object is to make this MONTHLY WEATHER REVIEW a great engineering magazine and one that shall be the medium through which climatic matters which touch the use of water in any way shall be treated, and with the hearty cooperation of the engineers, which I am sure we can count on, this ambition will be fully realized.

THE PATHFINDER DAM AND RESERVOIR, WYOMING, WITH REFERENCE TO THE CATCHMENT AREA AND ITS WATER SUPPLY.

By L. V. BRANCH, Engineer in Charge.

The United States Reclamation Service, since its organization in 1902, has constructed, for the purpose of storing flood waters for irrigation use, 3 masonry dams which must be classed with the highest masonry dams ever constructed. These are, namely, the Roosevelt Dam on the Salt River in Arizona, the Shoshone Dam on Shoshone River in northern Wyoming, and the Pathfinder Dam on the North Platte River in central Wyoming. This Pathfinder Dam was the first of the 3 to be completed and it, with the resulting Pathfinder Reservoir, is the subject of this article. The location of this dam and reservoir is shown on fig. 1.

The principal dimensions of the Pathfinder Dam are as follows:

Length on top.....	432 feet.
Maximum height.....	218 feet.
Width of dam on top.....	10 feet.
Width of dam at base.....	94 feet.
Batter upstream face.....	15 per cent.
Batter downstream face.....	25 per cent.
Masonry.....	60 210 cubic yards.

The first stone was set on August 15, 1906, and the last stone June 5, 1909.

The dam was constructed in a narrow box canyon where the North Platte River cuts through a granite ridge about 2½ miles below the mouth of the Sweetwater River, and 47 miles southwest of Casper, Wyo., the nearest railway station.

The dam is constructed of a hard, coarse-grained granite, quarried near the north end of the dam. Both faces of the dam

were laid up in courses of cut stone, but the backing consisted of stones very irregular in shape and size laid on a heavy bed of mortar and the vertical joints filled with concrete.



FIG. 1.—Pathfinder Reservoir catchment area.

The accompanying photographs show both faces of the dam, fig. 2 being the downstream face and fig. 3 the upstream face.

The reservoir formed by this dam extends 23 miles up the North Platte River and 15 miles up the Sweetwater River and has a maximum width of about 4 miles. It will contain when filled to the height of the spillway, which is at elevation 5,850 feet above sea level, 1,025,000 acre-feet of water, an equivalent of 334,000,000,000 gallons, and will cover 21,774 acres.



FIG. 2.—Lower face of Pathfinder Dam, December, 1909.—L. V. BRANCH.

The water stored in the Pathfinder Reservoir is now used to water those lands in eastern Wyoming and western Nebraska

lying on the north side of the North Platte River and under the Interstate Canal, which canal has been constructed by the Reclamation Service. It is expected that the Interstate Canal will receive future extensions and that other canals will be constructed from the North Platte River until the full flow of the river is put to beneficial use. When the Reclamation Service first investigated the irrigation possibility of the North Platte Valley it was found that during dry years the total low-water flow of the river was used and the only available waters for new canals were the spring floods.

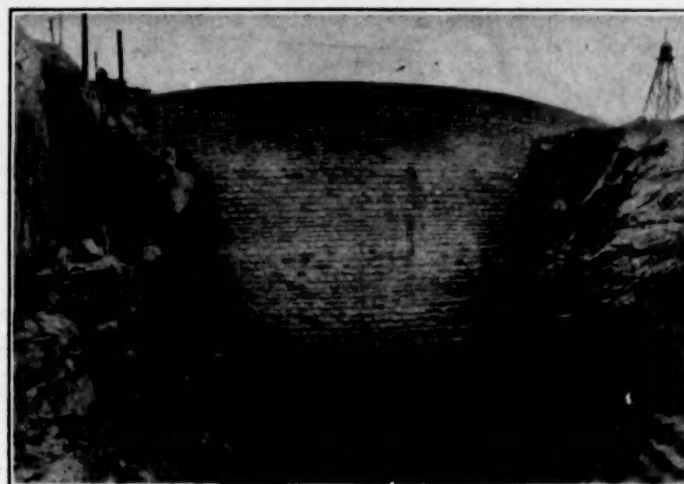


FIG. 3.—Upper face of Pathfinder Dam, December, 1909.—L. V. BRANCH.

The drainage area of the North Platte River above the Pathfinder Dam is approximately 12,000 square miles. The run-off from this catchment basin for the past 4 years, as determined at Pathfinder, is as follows:

Year.	Run-off per square mile.	Depth of run-off.	Run-off.	Discharge.	
				Maximum.	Minimum.
	<i>Cu. ft. p.s.</i>	<i>Inches.</i>	<i>Acres-feet.</i>	<i>Sec.-feet.</i>	<i>Sec.-feet.</i>
1906.....	0.159	2.166	1,385,743	12,090	100
1907.....	0.211	2.868	1,834,319	12,090	178
1908.....	0.107	1.47	926,132	6,250	215
1909.....	0.278	3.776	2,426,180	27,600	375

This run-off, as determined from the records for the 4 years above given, is distributed throughout the year as follows:

Per cent.		Per cent.	
January.....	1	August.....	5
February.....	2	September.....	3
March.....	4	October.....	3
April.....	9	November.....	2
May.....	20	December.....	2
June.....	34		
July.....	15		100

It will be noted that over half of the run-off for the year occurs in the 2 months of May and June. This is due to the fact that the larger portion of the run-off comes from the melting snows in the mountains surrounding the North Park country of northern Colorado and the mountains at the headwaters of the Sweetwater River near South Pass City, Wyo. That portion of the catchment area lying below 8,000 feet is largely sage brush grazing land and furnishes a small proportion of the total run-off. The precipitation in this lower area has been determined at a number of meteorological substations for some years, which stations are still maintained. The precipitation on that portion of the catchment area lying above 8,000 feet above sea level, where the precipitation is largely in the form of snow, is not so well known.

An accurate knowledge of the amount or depth of snow in the high mountains and their foothills, with statements of the condition of the surface of ground when the snow first covered same and additional information as to whether the snow is loose or well packed, will render it possible to predict with considerable accuracy the run-off for the year. It is hoped that the Weather Bureau will be able to secure such data as to the snowfall at a number of stations in high altitudes so that the Reclamation Service may have at hand accurate information on which to regulate the Pathfinder Reservoir to the best advantage.

This regulation of the reservoir will also require a knowledge of the evaporation from the surface of same, and it is hoped that the Weather Bureau and Reclamation Service can cooperate to secure such records.

The Pathfinder Dam and Reservoir are parts of the North Platte Project, of which Mr. Andrew Weiss is Project Engineer and Mr. R. F. Walter, Supervising Engineer.

PROTECTION OF FRUITS FROM FROST, ETC.

Letter from the Secretary of the Missouri State Board of Horticulture to the Section Director at Columbia, Mo., and remarks by the latter.

I heartily agree with you that there ought to be close cooperation between the Weather Service and the various Departments of Agriculture. I certainly hope that in the near future it will be possible for the Weather Bureau to make a careful study of the reasons for crop failures, particularly fruit, in certain regions. In Missouri certain sections, for no apparent reasons based on topography or isotherms, nearly always escape injury. I particularly have in mind the famous peach region about the town of Koshkonong in Oregon County. As usual, that section suffered no injury from the blizzard of mid-April. The peaches at Koshkonong were absolutely unhurt. The peach district there extends a short way into Howell County, but I think not farther than Brandsville, as I know practically all of the fruit was destroyed in the northern and western parts of Howell County. This specially favored district seems to extend east into Ripley County, at least at Doniphan there was very little injury from the blizzard of April 24. However, at this place the fruits were badly winterkilled, whereas at Koshkonong there was no winter injury. However, I should explain that even in the vicinity of Koshkonong poorly kept orchards, or those located in low ground were injured by the cold weather of the winter.

The value of knowing the definite reasons why Koshkonong is such a favored place for fruit growing lies in the fact that there may be other regions just as good as the one spoken of; also if we knew why Koshkonong is favored above other places we might be in a position to give definite advice about the location of orchards in many parts of the State which have not been tried and, perhaps, on theoretical grounds, we might be able to forestall failures which are inevitable, owing to certain natural conditions of topography, physiography, temperature, etc.

It may not be possible to secure any definite information along the line I have mentioned without having a number of volunteer observers in and around the special districts to be studied. If it were feasible to undertake certain "climate surveys" of this kind, some very interesting statistics, I feel sure, would be quickly forthcoming.

Another line of work in which the fruit grower must look to the Weather Bureau for assistance is the matter of frost warnings in connection with the heating of orchards. Orchard heating is a new thing in this State and by no means old in other States. The great difficulty now in the way of heating orchards economically is that the growers either do not know the exact time at which to light their heaters, or being somewhat uncertain about the matter, become excited or, whatever the case may be, they light the fires too soon. In many instances the temperature does not fall quite low enough to make it

necessary to light the fires, but not knowing the danger point within a matter of 2° or 3°, a great deal of fuel may be consumed unnecessarily. Under such circumstances the grower finds that his neighbor who did not heat his orchard had just as much fruit as he did, and so loses faith. We have determined the exact temperatures representing the danger point at the different stages of development of fruit from the time the buds are dormant to the time the young fruit is of considerable size. It seems to me that it might be quite possible for the Weather Bureau to warn fruit growers, even in remote districts, of frosts and freezes in ample time for them to get everything ready for heating their orchards.

REMARKS BY GEORGE REEDER, SECTION DIRECTOR, IN CHARGE OF THE MISSOURI SECTION, U. S. WEATHER BUREAU.

The suggestion of Professor Howard that the Weather Bureau make careful study of the temperature effects in connection with the fruit crop with a view of ascertaining, if possible, why some localities appear to be more immune from killing frosts than other near-by regions is, while not new, an interesting one, and if followed out might lead to some valuable information that would be useful to the fruit grower.

The climatological records of southern Missouri probably cover too short a period of time to enable one to form a correct opinion as to whether Koshkonong lies within a "thermal belt" or "verdant zone." The data that we have however indicate that the locality in question is not appreciably more favored as regards weather changes than its neighbors.

Table 1 gives the average date of the last killing frost in spring, the latest date on which a temperature of 32° F. occurred, and the number of times that freezing temperatures occurred as late as May, at all stations in the southern tier of counties situated in about the same latitude as Koshkonong, from McDonald County on the west to Ripley County on the east, a strip of country averaging about 25 miles wide and 200 miles long.

TABLE 1.

County.	Station.	Latitude, north.	Longitude, west.	Elevation.	Record, years.	Average date of last killing frost in spring.	Latest date on which 32° F. occurred.	Year.	Number of times 32° F. occurred as late as May.
McDonald	Dean*	36 39	94 21	1000	12	Apr. 21	May 5	1906	2
Barry	Mineral Springs†	36 41	93 48	1475	12	Apr. 15	May 20	1894	1
Taney	Protem†	36 32	92 52	1000	5	Apr. 20	May 4	1903	1
Howell	Olden	36 50	91 54	1246	17	Apr. 16	May 9	1906	2
Oregon	Koshkonong	36 36	91 38	911	10	Apr. 16	May 1	1903	1
Ripley	Doniphan	36 37	90 49	440	7	Apr. 19	May 2	1909	1

*Near Anderson, P. O. †Closed in 1905. ‡Closed in 1906.

We find from the foregoing table that the section of the country extending from Koshkonong, and probably some little distance westward of that town, eastward to Doniphan, has but a slight advantage over the sections more to the northward and westward. The average date of the last killing frost in spring at Olden and Koshkonong (the latter being 20 miles farther south) is the same for 17 and 10 years, respectively. Freezing temperature has occurred at Olden as late as May, twice in 17 years, and once at Koshkonong in 10 years. It is true that a freeze occurred at a later date at Olden than at Koshkonong, but that can be accounted for by the difference in latitude and elevation. Similar differences at stations farther west may be accounted for in the same manner, including longitude, as the western part of the State is usually colder than the eastern part when averages are considered. In other words, the climatic factors in the region between Koshkonong and Doniphan do not vary more than one would expect for the latitude and topography.

The apparent immunity of orchards in this region, especially in the neighborhood of Koshkonong, from damaging tempera-

tures in the spring, is probably due to local air drainage (the cold air being drained away from the orchards), and the care given the orchards. To support the point made that the air drainage forms a large part of the protection, one has but to examine the columns headed "Latest date on which 32° F. occurred as late as May" and "Year," in Table 1. It will be seen that the dates of the month, as well as the years, are different for different stations. For instance, a freeze occurred at Koshkonong on May 1, 1903, but not at Olden or at Doniphan; and a freeze occurred at Doniphan on May 2, 1909, but not at Koshkonong nor at Olden, etc. Such irregular occurrences of freezing temperatures in localities are probably the result of the position and direction of movement of the center of the high pressure area (anticyclone) with reference to the locality. The cold air spreads out and is drained away down to the southern slope of the Ozark Plateau, sometimes more toward the southwestward, then toward the south; and again the flow may affect only the southeast.

Table 2 gives the lowest temperatures of record and the lowest temperatures during the winter of 1909-1910, at the same stations:

TABLE 2.

County.	Station.	Lowest temperature ever recorded.	Date.	Station.	Lowest temperature recorded during winter of 1909-1910.	Date.
		°F.			°F.	
McDonald	Dean	-25	Feb. 12, 1899	Dean	-22	Feb. 18
Barry	Mineral Springs	-28	Feb. 12, 1899	Hollister	-16	Feb. 18
Taney	Protem	-17	Feb. 13, 1905	Olden	-4	Feb. 18
Howell	Olden	-29	Feb. 12, 1899	Koshkonong	0	Feb. 18
Oregon	Koshkonong	-16	Feb. 13, 1905	Doniphan	-16	Feb. 18
Ripley	Doniphan	-9	Feb. 13, 1905			

*In Taney County, about 22 miles northwest of Protem.

In the table showing the lowest temperatures ever recorded, it will be seen that it was colder at Koshkonong than at Doniphan on the same day, by 7°; but in the table to the right showing the coldest day during the winter of 1909-10, there is a noticeable difference, the higher temperatures being at Koshkonong and Olden. It appears as if the cold air current had divided, one part rolling toward the White River Valley, as indicated by the temperature at Hollister, and the other part going toward the Black River Valley as indicated by the temperature at Doniphan. Instead of the favorable peach belt, if any, extending east and west as suggested by Professor Howard, it probably extends northerly and southerly, or in other words, it lies along the Ozark border, a narrow strip of table land having elevations ranging between 500 and 1,000 feet, on which are situated Koshkonong, Mo., and Mammoth Springs, Hardy, and La Crosse, Ark. This strip bends not far from La Crosse and thence extends northwestward above the White River Valley. The temperature on this border does not fall so low at times as does that at lower as well as higher altitudes.

TABLE 3.

County.	Station.	Temperature.	Date.
		° F	
McDonald	Dean	28	Apr. 26
Taney	Hollister	31	Apr. 26
Howell	Olden	27	Apr. 25
Oregon	Koshkonong	29	Apr. 25
Ripley	Doniphan	32	Apr. 25

The cold of April 25 and 26, 1910, that caused so much damage to the fruit crop of Missouri, was quite uniformly distributed over the section under discussion, as may be seen from Table 3.

The cold spell was accompanied by cloudy skies and rain mixed with snow, and the movement of the cold currents of air was quite different from that which takes place under a clear sky, or when there is no rain or snow. It will be observed that during cold periods, with more or less cloudiness and moisture, the temperature on the hills may fall to a lower value than the temperature in the valleys; on the other hand, had clear weather prevailed during the nights of April 25 and 26, the temperature conditions would have been reversed, the valleys probably being much colder. It is also quite clear had the fruit in the valleys escaped winter injury it would have received no more damage from the freeze of April than was sustained in the neighborhood of Koshkonong.

The horticulturists at the University of Missouri have closely determined the temperatures representing the danger point to fruit for the different stages in its development, as shown by the following brief summary of Circular No. 13, Missouri Experiment Station, 1909:

Fully dormant peach buds can stand 8° or 9° below zero (F.). When they are appreciably swollen zero is the danger point. When the buds are showing pink they can stand 15° above zero. When the buds are almost open, 25° is the point of danger. When the petals are beginning to fall, 23° above zero is cold enough to cause uneasiness. When the petals are off they can stand 30° above zero. When the "shucks" (calyx tubes) are beginning to fall off 32° above zero is the danger point.

It is estimated that the April, 1910, freeze caused a loss to the people of Missouri of \$2,500,000, and it would mean thousands of dollars to the fruit growers in carrying out protective measures in the future to know just when to start the heaters in the orchards. It has been demonstrated that it is not a difficult matter, if one is prepared for it, and knows how to start the work, to raise the temperature in an orchard 5° to 6°, sufficient during almost any cold night in the spring to save many an orchard from injury. The question asked so often is, "When shall we start the heaters?" To start them too soon is expensive; but to start them too late would be more expensive in the end. In this matter of advice, the Weather Bureau must shoulder the burden; and it must take up the task with an earnestness that should prove successful. The forecaster must be thoroughly familiar, not only with the geographical location and topographical conditions of the section for which forecasts are made, but he must keep himself fully informed as to the progress of the fruit crop in its different stages of advancement. The State forecast issued by the district forecaster is all that is necessary for the public in general, but where specific information is desired it is not satisfactory. It will not suffice to simply send a weather message to a fruit locality in time of danger from low temperature, reading "Fair to-night and colder, with frost;" but the message must say *how cold* it is expected to be; for instance something like the following, "Fair and colder to-night, with frost; temperature about 36°; no danger to fruit." And again, "Fair and colder to-night, with freezing temperature; 28° or lower by morning; start heaters after midnight."

While specifying the exact degree of cold expected may not be practicable for the district forecaster, owing to the extent of territory forecast for, and the limited time in which he has to make the forecast, it is being done, and can doubtless be brought to a high degree of accuracy, by the local forecasters.

TABLE 1.—Climatological data for May, 1910. District No. 8, Missouri Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
Wyoming.																			
Arapahoe	Fremont		2																David Malloy.
Barnum	Johnson	5,500	6								1.55		1.00	T.	4	12	14	4	Thomas Freegaard.
Basin	Big Horn	3,862	11	58.0	+ 1.9	87	30	28	1	44	1.37	+0.18	0.66	0.0	5	21	5	5	O. J. Robertson.
Bennett	Carbon		2																Chas. C. Young.
Big Creek Station	Albany			46.3		87	27	18	17	57	2.02		0.90	5.0	8	9	7	9	U. S. Forest Service.
Casper	Natrona	5,101	2																M. C. Cook.
Cheyenne	Laramie	6,088	39	49.6	- 1.4	79	31	25	2	37	2.34	- 1.09	0.98	8.2	12	8	12	11	U. S. Weather Bureau.
Chugwater	do	5,282	9	51.6	+ 1.3	82	28	28	17	45	2.36	- 0.48	1.01	7.0	10	4	21	6	George Milne.
Clark	Big Horn	4,320	4	54.9		84	29	28	2	38	2.67		1.32	T.	11	15	7	9	Chas. A. C. Snow.
Cody	do	5,000	3	52.3		82	29	24	2	43	0.48		0.15	3.5	5	20	6	5	F. A. Fish.
Crystal Lake Reservoir	Laramie	6,900	1	47.1		77	31	22	2	43	2.52		0.62		7	7	16	8	Cheney City Engineer.
Dome Lake	Sheridan	8,821	2	39.5		68	30	12	2	36	3.81		1.10	37.0	9	7	17	7	Chas. Hilday.
Douglas	Converse	4,793	1																Henry C. Miller.
Dubois	Fremont	6,909	3	46.2		81	31	23	4	42	1.14		0.35	6.0	6	14	13	4	Dr. F. H. Welty.
Eaton's Ranch	Sheridan	4,600	5	52.3		79	29	25	2	40	3.62		1.25	5.0	10	16	11	4	F. A. Eaton.
Echeta	Crook	4,200	1										1.75	3.0	3	21	4	6	M. R. Hunter.
Elk Mountain	Carbon		5								2.05		0.49	28.5	12				Wm. Richardson.
Encampment	do	7,322	1	49.3		77	31	22	16	45	2.05		0.54	0.0	7	12	8	10	U. S. Forest Service.
Erway	Natrona	1	1	48.8		85	31	22	2	44	2.63		0.85	0.0	15	14	9	8	Frank Jameson.
Fort Laramie	Laramie	4,270	32	53.6	- 1.9	87	31	20	17	44	1.08	- 1.34	0.41	0.0	8	16	12	3	John Hunton.
Fox Creek Station	Albany					72	31												U. S. Forest Service.
Gillette	Crook	4,546	3	54.6		90	29	27	16	51	1.94		0.61	3.0	9	11	12	8	S. D. Perry.
Granite Canyon	Laramie	7,337	5																Lee A. Boyce.
Hunters' Station	Johnson	8,000	4	41.4	- 0.4	73	29	10	3	45	3.22		0.66	19.0	12	14	9	8	U. S. Forest Service.
Hyattville	Big Horn	4,632	11	54.2	- 0.4	90	29	27	17	47			0.28	0.0	5	18	5	8	Wm. Booth.
Kirtley	Converse		6	49.8	+ 1.9	80	29	20	17	48	0.90	- 3.05	0.28	0.0	6	17	8	6	D. M. Zum Brunnen.
Kirwin	Big Horn	9,187	2	37.4		65	31	8	20	34	2.35		0.60	16.0	6	19	6	6	C. L. Tewksbury.
Knowles	Crook		1								1.90		0.59	5.5	10				G. A. Knowles.
Lander	Fremont	5,372	18	52.4	+ 0.4	86	31	23	17	47	1.19	- 0.99	0.74	5.0	8	15	12	4	U. S. Weather Bureau.
Laramie	Albany	7,188	19	47.2	+ 0.8	77	31	19	17	40	1.90	+ 0.24	0.45	0.0	10	10	7	14	University of Wyoming.
Leo	do	6,878	9	47.9	+ 1.4	80	31	19	2	48	0.85	- 1.06	0.28	1.3	10	17	5	9	C. A. Cowdin.
Lolobama Ranch	Big Horn	7,082	6	45.0	+ 3.3	75	31	14	3	47	2.32	- 0.39	0.87	4.0	10	15	11	5	Mary E. Painter.
Lovell	do		5	53.3		85	29	30	17	47	1.39		0.40	0.0	8	18	4	9	R. Fred Harrison.
Lusk	Converse	5,007	20	51.0	- 0.7	80	28	26	16	39	3.33	+ 0.48	2.00	0.0	6				D. E. Goddard.
Luther	Laramie		1	49.4		75	31	25	2	42	2.82		0.85	2.0	6				Henry D. Colburn.
Manville	Converse	5,050	1								1.96		0.65	6.0	12	16	10	5	C. A. Sherman.
Moorecroft	Crook	4,211	7	52.2	+ 1.7	84	29	15	17	56	0.94	- 1.31	0.65	3.0	5	6	11	14	James K. Somers.
Moore	Albany	6,000	9	50.5	+ 1.4	80	31	23	3	49	1.92	- 0.76	0.53	2.0	13	7	12	12	Edwin Moore.
Newcastle	Weston	4,319	3	53.3		82	29	24	17	44	2.77		0.91	1.5	8	12	17	2	Dr. S. W. Johnson.
Pathfinder	Natrona	5,735	4	54.2	+ 1.1	84	31	29	2	45	1.30	- 0.66	0.39	T.	10	16	12	3	U. S. Reclamation Service.
Phillips	Laramie	4,900	7	53.4	+ 2.7	87	29	21	15	46	2.36	- 1.34	1.00		5	14	11	6	Mrs. Arthur Rugg.
Pine Bluff	do	5,038	9																Sumner Miller.
Powell	Big Horn	4,376	3	56.0		85	29	28	2	41	1.03		0.31	0.5	8	19	7	5	U. S. Reclamation Service.
Rawlins	Carbon	6,748	8	51.0	+ 0.8	85	31	23	17	41	1.17	- 0.57	0.40	6.0	8	14	11	6	C. J. Ehrenfeld.
Riverton	Big Horn	4,969	2	55.2		87	31	24	17	50									Fred L. McGiffin.
Saratoga	Carbon	7,300	12	50.0	0.0	84	21	20	17	46	1.16	- 0.69	0.47	T.	6	9	8	10	Saratoga & Eng'g'm't Ry.
Sheridan	Sheridan	5,790	15	52.2	+ 1.3	82	29	26	17	47	1.93	- 0.98	0.79	0.7	16	9	15	7	U. S. Weather Bureau.
Shoshone Dam	Big Horn	5,385	4	54.2		81	29	27	2	39	4.13		2.50	1.5	9	24	5	2	U. S. Reclamation Service.
Soldiers Home	Johnson	4,635	18	52.2	+ 0.8	81	29	26	2	39	2.71	+ 0.04	0.80	12.0	10	11	17	3	Geo. L. Courtney.
South Pass City	Fremont	7,873	8	43.0		76	31	16	17	48	1.40		0.46	9.6	6	15	7	9	John Sherlock.
Thermopolis	do	4,350	6	56.0		88	29	27	17	50	2.48		1.37	6.0	8	20	7	4	A. L. Dubig.
Upton	Weston		1								2.19		0.60	12.0	10	10	18	3	G. E. McPherran.
Valley	Big Horn	6,500	1								2.30		0.73	0.0	6	4	24	3	Jas. L. McLaughlin.
Verona	Sheridan		1								4.45		2.20	8.0	9	16	10	5	O. A. Rode.
Wiley	Big Horn	5,375	1	52.2		80	29	20	1	36	4.45		0.52	0.0	9	17	6	8	C. D. Marshall.
Wyncoote	Laramie	4,207	3	54.0		84	31	23	17	48	1.65		0.52	0.0	9	17	6	8	U. S. Reclamation Service.
Yellowstone Park	National Park	6,300	22	46.4	- 1.0	78	31	23	15	38	2.34	+ 0.43	0.56	9.5	15	3	15	11	U. S. Weather Bureau.
(1) Fountain Hotel	do	7,220	4	42.4		75	31	14	15	46	3.22		0.80	5.0	13	16	7	8	U. S. Army.
(2) Grand Canyon	do	7,900	3	42.4		74	31	15	2	44	3.02		0.97	13.0	12	10	15	6	Do.
(3) Lake Hotel	do	7,733	6	39.9		70	30	8	2	40	3.58		0.78	30.0	10	6	18	7	Do.
(4) Norris Gey. Basin	do	7,525	6	42.0		75	31	17	2	46	2.77		0.85	9.0	5	22	0	9	Do.
(5) Riverside	do	6,500	4	43.5		80	31	15	15	50	2.63		0.78	6.6	8	16	9	6	Do.
(6) Soda Butte	do	7,000	5	45.2		77	31	13	2	46	4.33		0.90	4.5	11	22	5	4	Do.
(7) Sylvan Pass	do	7,000	3	46.8		87	31	20	17	54	1.52		0.36	4.5	7	18	9	4	Do.
(8) Thumb	do	7,772	4	41.6		75	31	16	15	45	2.10		0.57	12.0	9	18	7	6	Do.
(9) Tower Falls	do	6,250	1	46.6		79	31	20	2	46	3.20		0.98	0.0	11	18	6	7	Do.
(10) Upper Gey. Basin	do	7,395	6	43.2		76	31	16	2	45	2.05		0.72	4.6	6	8	15	8	Do.
Montana.																			
Adams	Dawson		2	51.0		79	7	22	1	41	1.67		0.80	1.0	4	16	10	5	W. B. Ennis.
Adel	Cascade	5,200	11	49.9	+ 3.3	76	24	26	1	42	3.76	+ 0.31	2.00	20.0	9	14	10	7	Bessie F. Burch.
Agricultural College	Gallatin	4,700	12	49.9	+ 0.8	79	31	26	2	39	2.72	- 1.10	0.56	0.0	9	11	15	5	J. L. McCraw.
Augusta	Lewis & Clark	4,371	12	51.7	+														

TABLE 1.—Climatological data for May, 1910. District No. 6—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.					Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		Prevailing wind direction.
Montana—Cont'd.																			
Cut Bank.....	Teton.....	3,700	12	53.0		81	6	22	2	50	1.42	- 1.47	0.93	0.0	5	20	8	3	Chas. N. Thomas.
Decker.....	Rosebud.....	3,400	6										1.00	0.5	9	13	12	6	Adam Anderson.
Delpine.....	Meagher.....	5,000									2.17		0.80	T.	5	25	2	4	T. B. Holliday.
Denton.....	Fergus.....		2	51.3		78	7	24	2	45	2.34		0.80	T.	5	25	2	4	R. M. Chamberlain.
Dillon.....	Beaverhead.....	5,147	13	52.4	+ 1.0	86	31	28	2	44	2.77	- 0.58	0.80	T.	11	17	3	11	J. E. Monroe.
Dirty Creek.....	Meagher.....	6,000									2.18		0.82	1.0	13	19	6	6	Lewis Cameron.
Dry Creek.....	Broadwater.....	5,503									3.75		1.40	10.0	6	18	9	4	J. C. Stuart.
Dry Wolf Camp.....	Cascade.....	6,000									3.95		1.86	15.0	11	12	7	12	Mrs. R. J. Eveleth.
East Gallatin River.....	Gallatin.....	6,000									3.41		0.81	4.0	10	16	9	6	John Eberhart.
Ekalaka.....	Custer.....		10	52.2	- 0.4	80	27	21	2	49	1.19	- 1.17	0.50	T.	4	14	9	8	Wm. Freese.
Elkborn.....	Jefferson.....	6,576	1								3.29		1.05	7.5	10	12	10	9	James Heagan.
Evans.....	Cascade.....	4,900	3	52.6		84	31	22	15	42	3.41		2.30	22.0	4	18	9	4	H. Tharsier.
Fellon.....	Custer.....	2,298	6	53.6		82	7	25	2	48	2.33		1.11	0.0	5	13	12	6	Mrs. A. C. Gifford.
Family.....	Teton.....	3,950	1	52.8		84	25	15	1	46	2.14		0.68	0.0	7	22	4	5	U. S. Reclamation Service.
Fish Creek.....	Silver Bow.....	8,500		43.8		70	30	20	2	32	4.24		0.90	15.5	8	12	11	8	O. B. Tilton.
Fish Tail Creek.....	Carbon.....	5,000									3.21		0.71		12	16	6	9	O. E. Haskin.
Flathead Creek.....	Gallatin.....	6,000									4.67		1.31	8.4	11	13	8	10	L. G. Brown.
Forsyth.....	Rosebud.....	2,514	4	57.4		84	8	26	2	44	2.80		1.20	0.0	7	16	9	6	W. F. Clarke.
Fort Benton.....	Chouteau.....	2,630	33	54.4	- 0.7	80	25	30	2	38	1.93	- 0.73	0.55	0.0	5	17	10	3	Jere Sullivan.
Fort Shaw.....	Cascade.....	3,500	22	55.8	+ 1.7	81	6	23	2	48	1.35	- 0.73	0.63	0.0	6	21	7	3	U. S. Reclamation Service.
Fort W. H. Harrison.....	Lewis & Clark.....	4,004	6	55.5		83	30	28	2	55	1.91		1.08	0.0	10	17	8	6	Post Hospital.
Foster.....	Yellowstone.....			56.2		88	29	28	2	42			0.00	0.0	10	17	8	6	E. K. Bowman.
Garnett.....	Fergus.....	5,503	1	47.6		71	9	25	1	34	8.60		6.00	18.0	9	0	10	17	Thos. E. Seadly.
Glendive.....	Dawson.....	2,069	30	54.4	- 1.8	87	27	28	2	44	1.10	- 1.37	0.51	0.0	5	10	5	8	W. B. Walker.
Goldbutte.....	Chouteau.....		3	53.4		81	6	18	1	48	1.57		0.92	T.	6	12	14	5	J. T. Berthelote.
Graham.....	Custer.....		4			84	29	26	17	54	1.82		0.50	6.0	7	16	12	1	J. S. Run.
Grayling.....	Gallatin.....	6,700	4			78	30	19	17	48									P. Kerzenmacher.
Great Falls.....	Cascade.....	3,350	19	56.4	+ 2.6	80	30	33	15	38	1.84	- 0.76	0.71	T.	7	15	11	5	S. H. Bauman.
Half Moon Pass.....	Fergus.....	6,500									4.01		1.00	1.8	11	2	26	3	Thos. Stigen.
Half Way House.....	Broadwater.....	6,000									3.16		0.78	6.1	13	12	14	5	Gordon Deans.
Harlowton.....	Meagher.....	4,165	2			79	30	26	2	47	2.04		1.01	T.	6	12	4	8	Joseph Muir.
Hassel.....	Broadwater.....	5,200									1.91		0.70	0.0	9	2	26	3	E. C. Albrecht.
Havre.....	Chouteau.....	2,505	30	54.7	+ 0.6	86	7	20	1	46	1.40	- 0.69	0.70	0.0	11	17	9	5	U. S. Weather Bureau.
Helena.....	Lewis & Clark.....	4,110	30	55.0	+ 3.4	82	30	29	2	37	1.43	- 0.52	0.47	4.2	7	18	5	8	Do.
Highwood.....	Chouteau.....		3								4.62		2.80	12.0	7	18	4	9	W. S. McCord.
Home Park.....	Madison.....		5								2.70		1.04	4.0	9	21	5	5	H. L. Miller.
Huntley.....	Yellowstone.....	3,014	4	56.2		90	39	28	2	50	1.65		0.65	0.0	4	16	12	3	U. S. Reclamation Service.
Jones Canyon.....	Gallatin.....	6,830									5.35		1.23	0.0	11				Jas. McCune.
Jordan.....	Dawson.....		5	52.8		80	23	29	15	47	1.50		1.50	1.5	1				W. C. Henderson.
Klein Smith Creek.....	Jefferson.....	6,000	1								2.42		0.64	15.0	6	3	28	0	Mrs. E. W. Mills.
Lewistown.....	Fergus.....	4,010	13	51.4	+ 0.9	76	6	23	2	44	2.26	- 0.83	0.85	0.0	7	14	11	6	W. W. Watson.
Livingston.....	Park.....	4,488	13	54.6	+ 2.9	85	31	23	2	45	2.40	- 1.11	0.73	T.	10	20	2	9	Robert Terwilliger.
Lodge Pole Creek.....	Sweetgrass.....	5,700									5.72		1.20	28.0	12	17	4	10	F. G. White.
Lone Tree.....	Chouteau.....		5	56.4		81	7	28	2	44	2.32		1.12	T.	6	20	5	6	E. Wilson.
Lost Horse Creek.....	Meagher.....	5,800									2.51		0.85	5.0	9	13	12	6	C. M. Mason.
Malta.....	Valley.....	2,240	3	54.7		85	7	18	2	47	0.89		0.44	0.0	6	17	8	6	U. S. Reclamation Service.
Meadow Creek.....	Madison.....	6,703									0.63		0.30	5.1	7	18	9	4	F. E. Parent.
Melstone.....	Fergus.....	2,903									2.37		1.14	0.0	6				E. J. Parkinson.
Mildred.....	Custer.....										1.66		0.61	T.	6	15	16	0	Leon B. Clarke.
Miles City.....	do.....	2,371	19	57.0	+ 0.3	86	27	32	2	43	1.12	- 0.86	0.67	3.0	8	16	10	5	U. S. Weather Bureau.
Mill Creek.....	Park.....	5,500	1																W. H. Edick.
Moore.....	Fergus.....		3								2.42		0.70	4.0	8	21	6	4	Clyde Grove.
Mudd Creek.....	Deer Lodge.....																		Emory Mudd.
Norris.....	Madison.....	4,845	4	55.1		85	31	29	2	36	2.64		1.05	1.9	13	13	6	12	Madison River Power Co.
Nye.....	Sweetgrass.....		2																F. L. Bryant.
Olsen Creek.....	Jefferson.....	6,345	1								2.72		0.89	4.1	9	18	8	5	Robt. Olsen.
Pipestone Pass.....	do.....	7,000	1								3.36		0.70	2.0	9	11	15	5	Mrs. Theola Kiermeyer.
Poplar.....	Valley.....	2,020	25	55.6		92	29	22	1	53	1.25	- 0.63	0.92	0.0	2	25	0	3	H. M. Cozier.
Raymond.....	Teton.....	4,260		50.8		76	29	25	2	38	1.56		0.50	0.0	9	19	7	5	W. H. Campbell.
Red Lodge.....	Carbon.....	5,548	10	47.5	+ 1.5	77	29	11	2	41	5.03	+ 0.08	1.14	10.0	11	11	13	7	I. A. Draper.
Reese Creek.....	Gallatin.....	5,000									5.10		1.02	14.2	9				Henry Cramer.
Renova.....	Jefferson.....	4,383	11	53.8	+ 2.5	83	30	22	2	47	1.83	- 0.55	0.54	0.5	9	19	5	7	F. B. Elmer.
Rimini.....	Lewis & Clark.....	7,900	2																Milo Brooks.
Ryegate.....	Yellowstone.....	3,640	1	53.4		83	30	23	2	44	0.98		0.40	0.0	8	20	2	9	H. W. Scherfenberg.
Sedan.....	Gallatin.....	3,155	2																Jas. Woosley.
Springbrook.....	Dawson.....		9	52.7		81	7	20	1	45	1.89		1.13	0.0	8	5	18	8	Mrs. H. L. Miller.
Stearns.....	Lewis & Clark.....	4,500									1.97		0.70	5.0	5	12	1	18	J. W. Hardgrove.
Three Forks.....	Gallatin.....	4,066		54.2		81	31	25	2	48	1.67		0.47	0.0	9	24	4	3	A. A. Adams.
Tokna.....	Dawson.....	2,050	5	53.0		84	27	25	12	47	1.81		1.81	T.	1	10	8	4	U. S. Reclamation Service.
Townsend.....	Broadwater.....	3,790	1								1.89		0.74	0.0	7				River Observer.
Trail Creek.....	Park.....	6,000	1								3.73		0.72	8.1	10	19	4	8	Andrew Wiedenbauer.
Utica.....	Fergus.....	5,000	16	49.8	- 0.2	78	7	24	15	38	3.46	+ 0.81	1.65	0.0	6	14	11	6	P. W. Korell.
Valentine.....	do.....		4																B. M. Bean.
Virginia City.....	Madison.....	5,880	22																

TABLE 1.—Climatological data for May, 1910. District No. 6—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
North Dakota—Cont'd.																				
Jamestown.	Stutsman.	1,300	22	49.4	- 4.8	80	14	20	27	55	0.15	- 2.74	0.15	0.0	1	6	19	6	nw.	L. B. Baldwin.
Lamoure.	Kidder.		3	49.8		82	14	20	27	46	0.42		0.29	0.0	3	15	11	5	nw.	E. V. Virgin.
Lamoure.	Lamoure.	1,307	3								0.30		0.23		3					A. H. Ormsby.
McHenry.	Eddy.	1,509	1	49.2		80	14	22	12	45	0.85		0.44		8	6	19	6	nw.	John Knox.
Manfred.	Wells.	1,605	8	50.5		84	27	21	12	52	0.84		0.28	0.0	6	6	20	5	nw.	P. B. Anderson.
Marmarth.	Bowman.		3								0.91		0.54	0.5	7	16	6	9	w.	S. P. Grane.
Marstonmoor.	Stutsman.		13	47.7		79	27	13	27	59	0.50		0.37	0.0	2	15	10	6	nw.	H. H. McCumber.
Medora.	Billings.	2,225	13	52.0	- 3.2	83	26	22	12	49	0.96	- 1.20	0.95	T.	3	10	14	7	sw.	J. W. Hesser.
Melville.	Foster.	1,590	12	53.7		80	27	20	13	50	0.94	- 1.26	0.68	T.	4				nw.	J. P. Kidder.
Mott.	Hettinger.		3	48.7		80	26	22	11	47	1.52		0.72	0.0	6	11	10	10	e.	O. H. Opland.
Napoleon.	Logan.	1,955	18	49.5	- 3.6	84	18	13	12	52	0.32	- 2.00	0.17	0.0	4	13	5	13	nw.	C. J. Hoof.
New England.	Hettinger.	2,400	14	50.8	- 0.7	81	27	21	2	48	0.65	- 1.47	0.40	T.	2				nw.	W. C. McKenzie.
New Salem.	Morton.	2,163	3	50.6		85	18	16	3	48	0.74		0.28	T.	7	9	14	8	nw.	J. Christianson.
Orange.	Adams.		3	49.6		82	18	20	27	45	0.80		0.62	0.0	3	15	8	8	nw.	J. E. Goforth.
Palermo.	Ward.	2,290	6																	T. A. McCann.
Schafer.	McKenzie.		1	53.2		81	27	22	12	43	0.89		0.46	0.0	5	14	11	6	se.	F. L. Clark.
Steele.	Kidder.	1,857	14																	B. C. Smith.
Swartwood.	Bowman.		2																	W. F. Adams.
Washburn.	McLean.	1,731	6	52.3		84	27	23	12	44	0.71		0.20	0.0	5	6	19	6	s.	W. R. Peterson.
Williston.	Williams.	1,875	33	50.6	- 3.7	80	27	24	1	41	1.18	- 1.08	0.58	0.0	7	8	11	12	n.	U. S. Weather Bureau.
Wishek.	McIntosh.	2,010	5								0.90		0.40	0.0	5	16	11	4	nw.	H. E. Timm.
South Dakota.																				
Aberdeen.	Brown.	1,300	20	52.0	- 3.8	85	18	24	3	45	1.40	- 2.60	0.40	0.0	6	21	3	7	ne.	D. G. Gallett.
Academy.	Charles Mix.		11	55.2	- 3.2	87	19	27	3	46	1.76	- 1.62	0.51	0.0	11	14	9	8	se.	I. T. Lothrop.
Alexandria.	Hanson.	1,352	21	55.0	- 2.6	83	18	28	3	46	1.36	- 2.13	0.38	0.0	8	18	9	4	se.	W. S. Hill.
Ardmore.	Fall River.	3,557	1																	C. V. Glenn.
Armour.	Douglas.	1,521	15								2.25	- 1.20	1.00	0.0	3					J. S. Bean.
Belle Fourche.	Butte.	3,030	2																	U. S. Reclamation Service.
Bowdle.	Edmunds.	1,995	15																	Chas. Paul.
Brookings.	Brookings.	1,636	21	52.8	- 2.2	80	18	21	3	42	0.87	- 2.35	0.45	0.0	4	14	9	8	w.	Experiment Station.
Burke.	Gregory.		2																	James Connell.
Canton.	Lincoln.	1,348	15	53.3	- 4.8	87	24	20	3	53	1.04	- 2.98	0.43	0.0	4	20	5	6	se.	John H. Holsey.
Cascade Springs.	Fall River.	3,422	2	54.5		87	29	27	17	54	2.20		0.42	T.	8	11	13	7		Fred Noerenberg.
Castlewood.	Hamlin.	1,685	4	50.8		82	19	20	3	43	0.55		0.16	0.0	8	12	8	11	nw.	M. N. Bradley.
Centerville.	Turner.	1,229	13	54.1		84	18	25	3	49	1.69	- 2.72	0.55	0.0	12	12	7		nw.	Frank Williams.
Chamberlain.	Brule.	1,363	13	55.2	- 4.4	87	19	28	3	48	0.90	- 1.92	0.40	0.0	5	14	9	8	se.	G. A. Fry.
Clark.	Clark.	1,779	16																	O. H. LaCra.
Clear Lake.	Deuel.	1,800	7																	L. F. Hanley.
Cottonwood.	Stanley.		7	53.2		81	18	30	27	41	2.54		0.80	0.0	9	17	7	7	nw.	Experiment Station.
Daviston.	Perkins.		31	51.2		81	19	22	18	49	0.67		0.45	0.0	2	12	12	7	nw.	G. G. Davis.
Deadwood.	Lawrence.	4,535	48			77	27	19	17	44	3.55		1.10	6.2	9	16	7	8		R. E. Grimshaw.
Deerfield.	Pennington.	6,000									1.94		0.49	4.0	8	15	8		nw.	Frank E. Miller.
De Smet.	Kingbury.	1,726	17	52.5		82	19	22	3	42	0.70	- 2.28	0.40	0.0	4	20	4	7	sw.	J. G. Purinton.
Dowling.	Stanley.	2,250		54.6		83	18	24	2	40	2.35		1.25	T.	7	14	10	7	se.	M. P. Dowling.
Dumont.	Lawrence.	6,195									2.94		0.51	4.0	13	8	9	14	nw.	A. B. Wood.
Elk Mountain.	Custer.	4,700									3.05		0.81	0.2	6	13	9	9	nw.	James E. Blaine.
Elk Point.	Union.	1,127	11	56.24		82	18	32	13	44	2.35	- 1.58	1.25	0.0	5					M. Hoffman, jr.
Ellington.	Perkins.																			A. O. Knutsen.
Englewood.	Lawrence.	5,723									2.65		0.45	4.0	11	6	12	13	nw.	John B. Jolly.
Eureka.	McPherson.	1,884	1	52.6		85	18	22	2	40	0.42		0.16	0.0	5	7	19	5	se.	Experiment Station.
Faulkton.	Faulk.	1,595	15	52.4	- 3.4	83	18	24	4	42	0.83	- 1.88	0.48	0.0	4	19	1	11	n.	Miss Belle Talcott.
Flandreau.	Moody.	1,565	20	53.8	- 2.1	80	18	27	13	37	1.85	- 2.36	0.75	0.0	5	18	6	7	n.	W. A. Harris.
Forestburg.	Sanborn.	1,231	18	54.2	- 3.1	87	19	25	3	50	1.07	- 1.86	0.33	0.0	6	18	7	6	se.	S. S. Judy.
Fort Meade.	Meade.	3,624	28	53.4	- 1.6	84	27	26	27	40	2.70	- 1.61	0.65	T.	8	12	9	10	w.	Post Hospital.
Frederick.	Brown.	1,371	3			85	18	26	2	51	0.62		0.41	0.0	4					J. E. Jeffers.
Gannaville.	Buffalo.		12	54.4	- 3.1	90	19	28	3	48	1.96	- 1.03	1.30	0.0	4	12	12	7	nw.	V. P. Drips.
Greenmount.	Lawrence.	6,430									2.17		1.03	27.3	6	18	6	7	w.	Hugh V. Harlan.
Greenwood.	Charles Mix.		16	56.7	- 3.9	87	8	28	3	48	2.53	- 0.61	1.47	0.0	5	14	12	5	nw.	T. C. Williamson.
Hardy Ranger Station.	Lawrence.	6,000									3.31		1.23	13.0	10	26	2	3	sw.	Mrs. Mary E. Seals.
Harvey's Ranch.	do.	6,282									3.14		0.60	6.5	10	12	8	11	nw.	Jerome Harvey.
Hermosa.	Custer.	3,278	4	54.3		83	6	27	2	43	3.23		1.10	T.	10	16	7	8		S. M. Booth.
Highmore.	Hyde.	1,800	14	53.0	- 3.6	85	31	24	2	45	1.00	- 1.42	0.60	0.0	10	14	5	12	ne.	Experiment Station.
Hill City.	Pennington.	5,067									2.95		0.60	T.	12	16	5	10	se.	Geo. A. Karr.
Hopewell.	Stanley.			53.7		90	30	27	2	53	1.42		0.80	0.0	6	15	7	9	se.	E. R. Myers.
Howard.	Miner.	1,564	18	50.74		83	18	24	3	42	1.40	- 1.40	0.52	0.0	10	18	7	6	se.	J. J. Cox.
Howell.	Hand.		8	52.0		88	18	25	3	51	0.99		0.32	0.0	8	15	10	6	se.	M. A. Shuster, jr.
Huron.	Beadle.	1,336	28	53.2	- 4.1	83	18	30	12	45	1.05	- 1.87	0.41	0.0	8	16	6	9	nw.	U. S. Weather Bureau.
Ipawich.	Edmunds.	1,530	13	51.0	- 4.2	85	18	22	2	45	0.65	- 3.88	0.30	0.0	3	22	5	4	sw.	J. B. Taylor.
Kadoka.	Stanley.	2,467	1	53.8		86	18	30	3	47	1.77		0.70	0.0	12	15	8	8	nw.	Rev. D. S. Brown.
Kennebec.	Lyman.	1,689	17	54.8	- 2.6	87	18	21	3	50	1.30	- 1.08	0.33	0.0	9	19	4	8	nw.	R. C. Van Horn.
Kidder.	Marshall.	1,295	6	53.0		83	18	22	27</											

TABLE 1.—Climatological data for May, 1910. District No. 6—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
South Dakota—Cont'd.																				
Stephan	Hyde	1,840	6	52.1		85	18	23	3	46	1.12		0.30	T.	9	13	7	11	nw.	Rev. A. Mattingly.
Tama	Meade		1																	J. J. Daly.
Vale	Butte	2,765	2	53.3		82	27	24	2	45	1.75		0.62	0.2	5	18	8	5	e.	U. S. Reclamation Service.
Vermilion	Clay	1,222	9	55.6	- 2.8	83	18	27	3	40	2.41	- 2.35	0.78	0.0	7	21	4	6	s.	Prof. E. C. Perisho.
Water's Ranch	Lawrence	4,000									1.92		0.40	3.5	9	12	6	13	nw.	George Waters.
Watertown	Codington	1,735	16	52.2	- 2.0	84	18	25	3	43						21	4	6	n.	Robert Q. Wood.
Wentworth	Lake		17	52.7	- 3.0	82	18	25	3	38	1.54	- 2.30	0.51	0.0	9	21	5	5	w.	R. C. Zimmerman.
Westington Springs	Jerauld	1,410	11								1.16		0.50	0.0	5	13	11	7	ne.	F. N. Dunham.
White Lake	Aurora	1,646									2.12	- 1.78	0.73	0.0	12	7	18	6	nw.	Mrs. G. A. Rogers.
Yankton	Yankton	1,234	36	55.2	- 4.8	83	18	30	3	40										U. S. Weather Bureau.
Minnesota.																				
Pipestone	Pipestone	1,710	11	50.8	- 6.9	79	19	26	3	40	1.41	- 1.94	0.73	0.0	5	15	11	5	nw.	W. S. Campbell.
Colorado.																				
Akron	Washington	4,650	8								2.80		0.71	0.0	9					Ira M. Barnhouse.
Alma	Park	10,238	13								1.31		0.55	15.0	6	20	0	11	nw.	F. H. Clark.
Arriba (near)	Lincoln	5,238	4								1.68		0.71	1.5	8	14	10	7	ne.	C. S. Graves.
Auldhurst	Teller	8,500									2.35		0.60	16.5	7	8	17	6	n.	Mrs. Alice A. Auld.
Barker	Boulder	8,000	3																	Eastern Colo. Power Co.
Boreas	Park	11,489									1.05		0.54	15.8	6	3	17	11	nw.	Frank Soper.
Boulder	Boulder	5,347	14	55.8	- 0.2	84	31	28	2	31	3.38	+ 0.32	1.53	7.0	8	15	12	4	w.	S. A. Giffin.
Burlington	Kit Carson	4,160	6	55.7		89	31	30	2	30	2.28		0.80	0.0	8	11	16	4	se.	C. Creglow.
Cassella	Park	8,445									1.15		0.60	9.0	5	13	8	10	w.	Harriet M. Cassell.
Castle Rock	Douglas	6,220	18	51.9	- 1.7	81	31	20	22	41	2.84	+ 0.38	0.90	0.0	11					Chas. Hy. Ellis.
Cheesman	Jefferson	6,890	7	51.2		82	31	26	17	48	3.13		1.60	16.0	4	8	21	2	nw.	C. L. Adams.
Cheyenne Wells	Cheyenne	4,279	18	56.0	- 1.6	90	31	24	4	46	2.54	+ 0.20	0.81	0.0	8	11	12	8	ne.	J. B. Robertson.
Como	Park	9,785	10																	Edwin Pike.
Cope	Washington		12	57.8*		93*	8	28	17	51*	3.41	- 0.01	1.06	0.0	8	8	10	13	s.	A. A. Williams.
Corona	Grand	11,680	3	31.0		57	31	10	27	27	5.27		1.11	48.6	16					U. S. Weather Bureau.
Denver	Denver	5,272	38	54.8	- 1.8	85	31	29	2	36	2.50	- 0.04	1.04	6.3	11	11	15	5	ne.	Do.
Edgewater	Jefferson	5,450	2	53.8		86	31	27	17	40	2.53		1.03	0.0	8	18	7	6		Dr. J. B. Fish.
Estes Park Fish Hatchery	Larimer	8,000									3.03		0.75	20.0	11	3	15	13	w.	Gaylord H. Thomson.
Fort Collins	Larimer	4,985	31	53.7	- 0.9	87	31	28	17	41	4.75	+ 1.80	1.48	0.0	12	9	16	6	nw.	Colorado Agri. College.
Fort Morgan	Morgan	4,319	12	56.5 ¹		91 ¹	31	24 ¹	17	46	2.28		1.05	0.0	4	9 ¹	14 ¹	2 ¹		Della M. Scott.
Frances	Boulder	9,300	5	45.5 ¹		75 ^c	31	20 ^c	3	36 ^c			39.0		9 ^a	17 ^a	4 ^a		w.	D. A. Barry.
Fry's Ranch	Larimer	7,500		46.8		80	31	16	3	43	2.74		0.67	10.0	13	12	13	6	w.	Norman W. Fry.
Georgetown	Clear Creek	8,550	9								2.24		0.58	22.0	11	10	15	6		H. L. Corbett.
Greeley	Weld	4,649	18	55.6	- 0.9	90	31	29	17	44	2.76	+ 0.18	1.27	1.0	12	14	14	3	e.	Nelson Reynolds.
Hartel	Park	7,673									0.79		0.27	5.5	6	17	9	5	w.	Emily Kleinknecht.
Hawthorne	Boulder	6,000	2								4.22		1.67	5.0	9	22	6	3		B. E. Chesebro.
Holyoke (near)	Phillips	3,745	14								2.64		0.70	0.0	8	8	11	12	se.	A. C. Couble.
Idaho Springs	Clear Creek	7,534	10	48.7		80	31	23	2	40	2.62	- 0.52	0.72	16.0	10	3	24	4	w.	J. J. Willis.
Kessler	Boulder	7,720	3																	Central Colo. Power Co.
La Porte	Larimer	5,053	19								3.24	+ 0.11	1.47	T.	6					P. A. Taft.
Le Roy (near)	Logan	4,380	20								2.34	- 0.23	0.99	2.5	13				nw.	Chas. Green.
Longmont	Boulder	4,980	8	55.5 ^c		89 ^c	31	28 ^a	17	47 ^c			0.0		9 ^c	14 ^c	5 ^c			Geo. W. Johnson.
Long's Peak (near)	Larimer	8,600	15	42.3	+ 0.9	73	31	14	3	42	5.10	+ 2.83	1.65	31.0	8	15	12	4	w.	Enos A. Mills.
Moraine	do	7,775	20	46.2	+ 0.9	76	31	11	3	43	1.49	- 0.90	0.57	17.0	3	9	18	4	w.	J. D. Stead.
Platte Canyon	Jefferson	5,492	11								2.70		1.30	0.0	8	10	16	5	n.	Denver Union Water Co.
St. Cloud	Larimer	7,750	7								2.69		0.72	T.	6	9	16	6	e.	Mrs. E. K. Bristol.
Sedgwick	Sedgwick	3,573	2	55.0		90	31	20	17	50	2.59		0.82	0.0	12	15	14	2	ne.	Dr. Edwin Lewis.
Sill Mine	Clear Creek	11,500	1	35.2		61	31	12	2	30	1.79		0.60	18.8	10	18	7	6	w.	Chas. F. Deininger.
Spicer (near)	Larimer	8,700									1.31		0.50	3.8	4	15	6	10	sw.	Frank W. Murphy.
Sterling	Logan	3,892		53.9		85	31	23	17	50	2.85		1.26	0.0	10	9	14	8	w.	Great Western Sugar Co.
Waterdale	Larimer	5,206	7	54.6	+ 2.1	87	31	24	17	43	3.54	+ 0.82	1.17	0.0	15					P. H. Boothroyd.
Westlake	Boulder		2								3.04		1.20	T.	6	16	0	15	w.	G. E. Richardson.
Wray	Yuma	3,512	14	57.2	- 2.0	89	31	30	3	46	3.32	+ 0.64	0.90	0.0	10	10	16	5	n.	J. C. Tuomey.
Yuma	Yuma	4,138	19								2.38	- 0.02	0.71	T.	9	8	6	17	se.	Geo. W. Custer.
Nebraska.																				
Ainsworth	Brown	2,521	5	55.6		87	19 ¹	30	21	47	2.11		0.65	2.3	7	1	23	7	nw.	John M. Cotton.
Albion	Boone	1,747	12	55.0	- 4.7	84	31	25	3	44	2.15	- 2.07	0.96	0.0	10	11	8	12	s.	F. M. Weitzel.
Alliance	Boxbutte	3,968	15	52.1	- 3.1	84	31	26	17	48	1.90	- 1.04	0.75	0.0	6	15	12	4	n.	J. A. Keegan.
Alma	Harlan	1,939	13	57.0	- 3.9	89	31	26	3	47	2.38	- 1.04	0.74	0.0	11	14	8	9	n.	W. A. Sharpnack
Anoka	Boyd		4	54.0		88	19	21	3	55	1.48		0.53	0.0	4	14	7	10	nw.	W. Whitley.
Aradalia	Valley	2,186	11								2.50	- 1.23	1.00	0.0	7	10	8	13	se.	Jas. L. Owen.
Ashland	Saunders	1,100	27	56.5	- 5.7	82	10	30	3	39	2.74	- 1.57	0.68	0.0	11	15	9	7	se.	Dr. A. S. von Mansfelder.
Ashton	Sherman	2,061	17								2.05	- 1.00	1.17	0.0	9	13	3	15	se.	F. Rein.
Atkinson	Holt	2,108	4	53.0		84	8	25	3	47	2.25		0.90	0.0	9	13	10	8	n.	Chas. J. Wilson.
Auburn	Nemaha	1,051	18	56.4	- 5.0	84	10	34	4	43	5.13	- 0.78	1.22	0.0	16	17	4	10	se.	J. R. Huffman.
Aurora	Hamilton	1,792	15	56.0	- 5.1	80	18 ¹	32	4	42	3.52	- 0.64	2.10	0.0	9				n.	Chas. Burl. & Quincy R. R.
Beatrice	Gage	1,235	19	58.0	- 3.3	82	10	33	3	37	4.35	- 0.21	1.27	0.0	11	15	4	12	ne.	Wm. S. Waxham.
Beaver City	Furnas	2,147	19	59.6	- 2.4	90	31	27	3	48	2.62	- 0.35	1.23	0.0	10	12	10	9	ne.	T. M. Davis.
Bellevue	Sarpy	1,210	28	57.4		79	20	37	3	33	3.22	- 1.00	0.64	0.0	11	15	7	9	ne.	Prof. A. A. Tyler.
Benkelman	Dundy	2,968	13								2.44	- 0.26	0.90							

TABLE 1.—Climatological data for May, 1910. District No. 6—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
Nebraska—Cont'd.																				
Enderslake.	Brown.	1,588	18	52.6		93	19	26	3	53	1.15		0.65	0.0	3	22	2	7	ne.	G. W. Chappell.
Ewing.	Holt.	1,588	18	54.1		87	30	24	3	49	1.88	- 1.26	0.80	0.0	8					G. H. Benson.
Fairbury.	Jefferson.	1,316	35	57.8	- 4.1	85	10	34	3	39	7.37	+ 2.51	1.60	0.0	14	8	11	12	se.	W. F. Cramb.
Fairmont.	Fillmore.	1,641	17	54.6	- 5.4	81	10	29	3	35	4.19	- 0.07	1.46	0.0	12	11	4	16	n.	Chi., Burl. & Quincy R. R.
Fort Robinson.	Dawes.	3,764	26	53.2	- 2.0	85	31	25	17	50	0.58	- 2.14	0.48	0.0	2	20	0	11	w.	Post Hospital.
Franklin.	Franklin.	1,820	19																	D. T. Shoemaker.
Fremont.	Dodge.	1,203	30	56.2	- 3.7	84	30	29	3	46	3.05	- 1.27	0.80	0.0	8	11	13	7	se.	Ernest Hahn.
Fullerton.	Nance.	1,629	8	55.8		88	30	28	3	51	2.66		1.29	0.0	5	13	15	3	nw.	Dr. F. W. Johnson.
Geneva.	Fillmore.	1,633	20	56.8	- 4.8	80	28	30	3	38	5.57	+ 0.70	1.20	0.0	10	10	11	10	se.	F. M. Flory.
Genoa.	Nance.	1,584	35	55.8	- 4.2	83	30	29	3	38	2.38	- 1.87	1.69	0.0	8	7	15	9	n.	G. F. Parsons.
Gordon.	Sheridan.	3,550	8	51.9		82	8	22	17	48	1.45		0.69	0.0	8	7	20	4	ne.	F. F. Williams.
Gosper.	Gosper.		8								3.95		1.65	0.0	8	10	11	10	ne.	E. H. Stoll.
Gotthensburg.	Dawson.	2,587	16	58.9	- 1.7	95	8	26	3	61	2.36	- 0.84	0.53	0.0	11	14	6	11	nw.	Dr. W. J. Bartholomew.
Grand Island.	Hall.	1,860	19	55.4	- 5.2	83	29	28	3	40	2.80	- 1.85	0.68	0.0	14	8	10	13	e.	E. A. Barnes.
Grant.	Perkins.	3,405	7	54.2		90	31	24	3	50	1.99		0.50	0.0	9	14	11	6	ne.	Cyrus Carver.
Greeley.	Greeley.	2,121	15	54.4		82	18	24	3	52	1.31	- 1.69	0.39	0.0	10	12	12	7	nw.	W. E. Morgan.
Guidedock.	Webster.	1,646	10								4.49	+ 0.12	1.10	0.0	8	5	14	12	ne.	J. S. Marsh.
Haigler.	Dundy.	3,258	15																	Chi., Burl. & Quincy R. R.
Halsey.	Thomas.	2,695	8	56.3		87	19	26	3	50	2.17		0.48	0.0	7	13	11	7	nw.	U. S. Forest Service.
Hartington.	Cedar.	1,309	19	55.0	- 3.0	85	18	26	3	45	1.38	- 2.94	0.80	0.0	6	9	10	12	nw.	D. E. Ewing.
Harvard.	Clay.	1,812	21	53.7	- 5.9	79	10	29	3	39	4.26	+ 0.24	1.12	0.0	12	11	10	10	ne.	Dr. J. T. Fleming.
Hastings.	Adams.	1,932	20	55.3	- 5.0	82	31	30	3	37	2.72	- 1.09	0.85	0.0	8	15	1	15	se.	Chi., Burl. & Quincy R. R.
Hayes Center.	Hayes.	3,821	17	55.9		90	31	25	3	50	2.85	- 0.29	1.26	0.5	10	17	8	6	nw.	C. A. Ready.
Hay Springs.	Sheridan.	3,821	23	51.4	- 2.6	82	29	21	17	50	1.16	- 2.22	0.58	0.0	6	10	11	10	nw.	A. Kadlecik.
Hebron.	Thayer.	1,458	25	55.7	- 4.9	82	10	32	3	35	6.70	+ 2.13	2.30	0.0	11					Dr. C. M. Easton.
Hemingford.	Boxbutte.	4,256	1								2.04		0.86	0.0	11					A. S. Eneyart.
Hendley.	Furnas.	2,231	6								2.04		1.06	0.0						F. L. Jones.
Hillsdale.	McPherson.	1	1	53.2		88	31	22	3	53	4.57	- 2.16	1.07	2.0	12	12	7	12	nw.	Mrs. M. R. Lloyd.
Holdrege.	Phelps.	2,324	18	56.5	- 4.1	84	8	29	3	48	2.50	- 2.19	0.87	0.0	7	13	2	16	se.	Chi., Burl. & Quincy R. R.
Hooper.	Dodge.	1,228	13	57.0	- 3.8	88	2	27	3	51	2.34	- 2.09	0.78	0.0	8					W. Howard Heine.
Imperial.	Chase.	3,278	20	55.4	- 2.9	90	31	25	3	48	1.98	- 1.04	0.63	1.5	10	8	8	15	nw.	Robt. Malcolm.
Kearney.	Buffalo.	3,146	20	57.4	- 3.5	88	31	31	4	48	2.39	- 1.95	0.70	0.0	7	12	11	8	nw.	N. C. Dunlap.
Kimball.	Kimball.	4,697	21	52.3	- 2.4	82	10	26	17	48	2.67	0.00	0.60	0.0	8	17	8	6	nw.	F. J. Bellow.
Kirkwood.	Rock.	15	54.4	- 3.7	88	19	23	3	49	2.13	- 1.25	1.10	0.0	7	13	12	6	se.	Mrs. C. Arter.	
Kowanda.	Deuel.	2									2.53		0.67	0.0	12					Geo. W. Hulse.
Lexington.	Dawson.	2,385	21	55.7	- 3.1	87	31	24	3	48	2.67	- 0.33	0.95	0.0	6	19	0	12	se.	Robt. Chadwick.
Lincoln.	Lancaster.	1,180	31	57.2	- 5.7	82	10	32	3	35	3.61	- 0.64	1.14	0.0	12	9	9	13	n.	U. S. Weather Bureau.
Loup.	Sherman.	2,067	16	55.2	- 4.3	83	19	23	3	47	2.33	- 0.98	0.87	0.0	7	14	5	12	nw.	E. S. Hayhurst.
Loyal.	Custer.	2									1.20		0.50	4.0	4	18	3	10	n.	C. H. Cass.
McCook.	Redwillow.	2,506	15	56.8	- 5.9	91	31	24	3	51	2.77	- 0.44	0.64	0.0	8	19	5	7	se.	C. G. Coglier.
McCool Junction.	York.	1,573	12								4.36	- 0.55	1.60	0.0	7					L. L. Slagle.
Madison.	Madison.	1,585	17	54.2	- 4.5	80	18	30	3	37	2.23	- 2.19	0.70	0.0	6				se.	Dr. F. A. Long.
Marquette.	Hamilton.	1,830	31								3.28	- 0.77	1.05	0.0	10					John Ellis.
Mason City.	Custer.	2,257	9								3.39		1.47	0.0	6					J. A. Ambsberry.
Minatare.	Scottsbluff.	3,825	1								2.09		0.81	0.0	5	13	13	5	se.	Anthony Kennedy.
Minden.	Kearney.	2,169	33	55.7	- 4.0	87	31	25	3	44	2.31	- 2.50	0.95	0.0	10	7	13	11	se.	Joel Hull.
Mitchell.	Scottsbluff.	2	53.1			84	30	23	17	47	1.73		0.59	0.0	8	18	4	9	nw.	U. S. Reclamation Service.
Monroe.	Platte.	1,525	13																	Wm. Webster.
Morrill.	Scottsbluff.	1																		Edwin K. Wieland.
Nebraska City.	Otoe.	941	33	57.6	- 4.2	80	28	31	13	36	5.84	+ 1.06	1.32	0.0	10	11	12	8	se.	Chi., Burl. & Quincy R. R.
Norfolk.	Madison.	1,532	27	54.2	- 4.8	84	18	24	3	44	2.34	- 1.74	0.87	0.0	8	19	4	8	nw.	Dr. P. H. Salter.
North Loup.	Valley.	1,961	22	55.0	- 4.1	86	31	25	3	50	2.75	- 0.52	0.75	0.0	6	14	8	9	se.	W. G. Rood.
North Platte.	Lincoln.	2,841	36	54.6	- 4.4	87	31	28	3	46	2.59	- 0.47	1.44	1.0	10	16	6	9	se.	U. S. Weather Bureau.
Oakdale.	Antelope.	1,722	23	54.0	- 4.3	83	18	25	3	45	1.95	- 1.87	0.54	0.2	10	12	12	7	nw.	G. S. Clingman.
Odell.	Gage.	1,278	16								7.24	+ 1.70	2.90	0.0	8	10	2	19	ne.	Chi., Burl. & Quincy R. R.
Omaha.	Douglas.	1,103	40	57.4	- 5.1	79	10	37	3	30	2.33	- 2.27	0.93	0.0	12	9	10	12	n.	U. S. Weather Bureau.
Ord.	Valley.	2,062	16								4.09	+ 0.82	1.21	0.0	5	12	7	12	s.	James Milford.
Orleans.	Harlan.	1,993	2								3.69		1.58	0.0	8					James McGeehin.
Osceola.	Polk.	1,644	12	56.4		89	20	30	3	37	4.28	- 0.46	1.10	0.0	7				n.	G. T. Ray.
Pallasde.	Hitchcock.	1									3.64		1.87	0.0	7					E. E. Young.
Palmyra.	Otoe.	1,142	15	57.6	- 3.8	82	10	38	3	43	4.55	- 0.30	1.32	0.0	11	16	9	6	n.	Thomas Coles.
Pawnee City.	Pawnee.	1,175	15	57.4		82	10	33	4	43	6.85	+ 1.65	1.58	0.0	13	15	5	11	e.	Frank A. Barton.
Plymouth.	Jefferson.	1,419	6	56.6		82	20	31	3	46	4.86		1.75	0.0	8	8	5	18	se.	John Ruppel.
Purdum.	Blaine.	10		53.6		85	8	24	3	49	1.60	- 1.56	0.47	2.5	7	14	9	8	se.	T. C. Jackson.
Ravenna.	Buffalo.	3,028	33	55.9	- 3.5	88	31	23	3	53	2.05	- 1.								

TABLE 1.—Climatological data for May, 1910. District No. 6—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.				Sky.				Observers.			
				Mean.	Departure from the normal.	Highest.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.	
Iowa.																				
Afton	Union	1,212	16	56.4	- 5.9	84	20	34	31	40	4.91	- 0.28	1.20	0.0	10	9	13	9	nw.	N. W. Rowell.
Allerton	Wayne	1,513	8	56.2	- 4.8	80	28	36	41	35	6.00	+ 1.49	1.16	0.0	16	17	3	11	nw.	Mrs. Geo. Shriver.
Alton	Sioux	1,305	5	54.4		84	18	23	3	40	1.88		0.61	0.0	7	21	3	7	n.	W. S. Slagle.
Atlantic	Cass	1,164	19	56.3	- 3.1	83	20	31	31	41	3.37	- 1.01	1.11	0.0	12	8	6	17	ne.	Thos. H. Whitney.
Audubon	Audubon	1,301	16	55.5	- 4.4	83	20	30	4	38	2.75	- 1.49	0.90	0.0	10	13	5	13	sw.	Geo. E. Kellogg.
Bedford	Taylor		10	54.6	- 6.4	78	10	29	13	42	4.17	- 1.08	0.85	0.0	16	11	7	13	se.	E. E. Healy.
Centerville	Appanoose										5.87		1.49	0.0	9	19	8	4	e.	Gordon Peacock, jr.
Chariton	Lucas	1,042	15	55.6	- 5.7	80	20	32	13	36	5.07	+ 0.70	1.30	0.0	10	20	0	11	nw.	C. C. Burr.
Clarinda	Page	1,009	20	55.3	- 4.9	80	28	33	13	41	6.20	+ 1.36	1.10	0.0	13	14	2	15	ne.	A. S. Van Sandt.
Cornings	Adams	1,117	18	55.4	- 5.0	81	28	31	13	38	4.90	+ 0.07	0.97	0.0	12	12	8	11	nw.	Jerome Smith.
Corydon	Wayne	1,101	17	56.8		81	20	34	13	35	4.73	+ 0.06	1.00	0.0	12	12	6	13	nw.	Clara Miller.
Creston	Union	1,312	5	54.6		80	20	31	13	37	4.82		0.86	0.0	13	16	2	13	nw.	Edgar Stovall.
Cumberland	Cass		10								2.73	- 0.96	0.91	0.0	8	20	2	9	se.	J. H. Reppert.
Denison	Crawford	1,180	16	54.3	- 5.0	79	10	27	13	41	2.42	- 1.69	0.77	0.0	9	14	9	8	n.	W. C. Van Ness.
Elliott	Montgomery		15	56.2		79	20	31	13	36	5.60		1.36	0.0	12	10	14	7	nw.	Henry Barnes.
Greenfield	Adair		17	54.8	- 5.6	79	20	31	4	35	4.12	- 0.90	1.04	0.0	10	12	12	7	nw.	R. B. Oldham.
Hancock	Pottawattamie	1,113	5	55.2		83	20	28	4	38	3.72		1.05	0.0	9	16	6	9	nw.	G. C. Rogers.
Harlan	Shelby	1,192	19	54.5	- 5.8	81	20	29	3	45	3.14	- 1.11	1.09	0.0	13	10	11	10	ne.	C. A. Reynolds.
Hopeville	Clarke		19	55.8	- 4.4	80	20	35	4	36	4.99	+ 0.30	1.29	0.0	15	8	13	10	nw.	M. T. Ashley.
Inwood	Lyon	1,474	6	54.0		85	18	20	3	46	1.43		0.55	0.0	13	18	4	9	n.	F. B. Hanson.
Lamoni	Decatur		3	57.4		82	19	35	4	34	6.91		1.27	0.0	16	20	2	9	se.	T. J. Fitzpatrick.
Larabee	Cherokee	1,266	20	53.6	- 4.7	82	18	26	3	40	2.45	- 2.07	0.73	0.0	11				nw.	H. B. Strever.
Laurens	Plymouth	1,224	14	54.5	- 4.8	78	18	23	3	38	2.70	- 2.09	0.76	0.0	10	10	15	6	ne.	G. A. C. Clarke.
Lenox	Taylor	1,250	15	56.1	- 5.1	80	20	35	3	35	4.47	- 0.25	0.75	0.0	14	16	8	7	s.	J. L. Hurley.
Leon	Decatur	1,120	8	55.6	- 7.3	81	20	35	4	35	6.68	+ 2.23	1.10	0.0	12	11	8	12	se.	Morris Gardner.
Little Sioux	Harrison		5	56.0		82	10	26	3	46	2.12		0.55	0.0	9	15	5	11	nw.	Geo. H. Gibson.
Logan	do.	928	43	56.4	- 4.6	85	20	29	3	46	2.93	- 1.20	0.80	0.0	9	14	8	9	nw.	Glenn H. Stern.
Mason	Cass		4	54.6		85	20	27	13	44	6.79		1.20	0.0	14	12	8	11	nw.	C. E. Smeltzer.
Mount Ayr	Ringgold	1,236	17	57.2	- 4.5	82	20	36	3	32	6.75	+ 0.99	1.51	0.0	14	9	14	8	nw.	A. F. Beard.
Odebolt	Sac	1,356	13	55.6	- 4.8	85	10	29	4	47	2.68	- 1.30	0.96	0.0	7	19	4	8	nw.	E. Starner.
Onawa	Monona	1,051	10	57.4	- 5.1	81	18	30	3	43	2.68	- 2.90	0.53	0.0	11	17	6	8	nw.	C. G. Perkins.
Pacific Junction	Mills	960	11	56.1	- 5.5	82	20	29	13	42	5.08	+ 1.07	1.60	0.0	10	11	11	9	n.	H. H. McCarty.
Rock Rapids	Lyon	1,358	11																nw.	W. C. Wyckoff.
Sheldon	O'Brien	1,422	10	53.9	- 4.0	87	18	25	3	50	2.65	- 2.45	0.80	0.0	11	16	9	6	nw.	Dr. A. W. Beach.
Sibley	Oswego	1,212	17	52.0	- 5.3	80	18	28	3	39	1.83	- 2.13	0.42	0.0	9	12	11	8	nw.	H. G. Doolittle.
Sioux Center	Sioux		11	54.0	- 4.3	79	18	30	3	36	1.53	- 3.32	0.69	0.0	8	17	8	6	ne.	J. de Ruyter.
Sioux City	Woodbury	1,135	21	54.8	- 6.0	81	18	28	3	37	1.99	- 2.38	0.84	0.0	11	11	9	11	n.	U. S. Weather Bureau.
Thurman	Fremont		13	56.6	- 5.7	80	10	32	13	45	4.65	- 0.55	1.84	0.0	12	9	12	10	nw.	C. R. Paul.
Washta	Cherokee	1,157	12	53.0		80	18	18	3	47	2.68	- 2.17	0.85	0.0	7	15	10	6	n.	H. L. Felter.
Woodburn	Clarke	961	11	54.4		80	20	28	4	40	5.29	+ 0.40	1.50	0.0	16	8	14	9	nw.	C. B. McDonough.
Kansas.																				
Abilene	Dickinson	1,157	15		- 5.4	89	10	37	8	39	6.92	+ 2.54	1.52	0.0	13	5	10	16	e.	I. H. Sherman.
Agricultural College	Riley	1,109	52	59.6		90	31	35	8	43	8.71	+ 4.20	1.60	0.0	15	11	8	12	nw.	Prof. J. O. Hamilton.
Alton	Osborne	1,651	8	59.2		90	31	35	8	43	3.30	- 0.12	0.81	0.0	10	10	10	11	se.	H. A. Storer.
Atchison	Atchison	973	19	59.4	- 4.9	85	10	40	8	31	8.10	+ 2.47	2.90	0.0	14	14	5	12	w.	M. F. Troxell.
Baker	Brown	1,182	10	56.4		82	10	35	4	34	5.76		2.09	0.0	14	10	0	21	n.	E. A. Bastien.
Beloit	Mitchell	1,383	15								6.64	+ 3.18	1.77	0.0	10	10	4	17	ne.	W. H. Houghton.
Blakeman	Rawlins	2,894	13	57.0		91	31	24	3	52	2.97	+ 0.45	1.10	0.0	11	13	7	11	ne.	C. L. Henderson.
Blue Rapids	Marshall	1,105	4								6.79		2.32	0.0	16	14	2	15	ne.	M. Norton.
Centralia	Nemaha	1,256	1	57.4		85	20	37	8	33	7.45		1.53	0.0	14	13	5	13	ne.	L. E. Hasen.
Chapman	Dickinson	1,123	6	59.6		93	10	37	8	38	8.57		1.91	0.0	12	13	6	12	n.	R. McShea.
Clay Center	Clay	1,203	9	58.4		89	10	35	3	40	10.87		3.25	0.0	11	16	2	13	ne.	O. L. Slade.
Colby	Thomas	3,138	19	56.8	- 3.8	92	31	27	3	48	2.26	- 0.01	0.41	0.0	14	10	13	8	se.	R. M. Chelf.
Concordia	Cloud	1,398	26	58.2	- 5.5	92	10	38	3	30	8.56	+ 3.86	3.27	0.0	14	5	15	11	n.	U. S. Weather Bureau.
Densmore	Norton	2,200	1	58.6		94	31	32	3	46	2.76		0.53	0.0	11	9	14	8	n.	F. S. Griffith.
Dresden	Decatur	2,731	16	56.2	- 3.6	91	31	27	3	45	3.77	+ 0.90	1.50	0.0	11	13	1	17	se.	Jacob Back.
Ellsworth	Ellsworth	1,537	6	58.4		91	31	34	8	42	3.65		1.39	0.0	11	12	9	10	s.	Geo. Seitz.
Enterprise	Dickinson	1,144	8	60.1		90	10	39	9	38	7.34	+ 2.96	1.70	0.0	11	11	7	13	ne.	C. F. Wagner.
Eskridge	Wabaunsee	1,412	4	59.1		85	10	39	8	30	6.94		1.84	0.0	13	10	7	14	s.	Geo. D. West.
Farnsworth	Lane	2,850	9	59.4		96	31	34	3	49	2.38		0.60	0.0	13	13	11	7	s.	C. M. Jenson.
Fl. Scott	Bourbon	857	35	61.7	- 3.9	87	10	37	13	36	6.31	+ 0.23	1.75	0.0	19	17	1	13	sw.	E. A. Shaver.
Frankfort	Marshall	1,146	16	58.2	- 5.9	87	10	35	4	40	9.16	+ 3.44	1.37	0.0	15	8	12	11	ne.	E. C. Dunham.
Garnett	Anderson	950	4	60.4		85	10	40	14	44	8.99		2.92	0.0	15	10	17	4	s.	D. D. Judy.
Goodland	Sherman	3,687	3																ne.	G. L. Calvert.
Gove	Gove	2,750	21	59.1	- 2.4	91	31	38	3	41	2.35	- 0.31	0.94	0.0	7	8	16	7	ne.	Jesse Roy

TABLE 1.—Climatological data for May, 1910. District No. 6—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
Kansas—Cont'd.																			
Wakeeney	Trego	2,456	27	58.9	- 3.6	91	31	36	17	41	3.51	+ 0.54	1.15	0.0	9	12	9	9	A. S. Peacock.
Wallace	Wallace	3,303	40	58.6		93	31	25	3	45	1.92	- 0.71	0.67	0.0	9	3	22	6	M. T. Griggs.
Wamego	Pottawatomie	1,002	17								8.85	+ 3.56	2.65	0.0	15	13	3	15	M. L. Stone.
Missouri.																			
Amoret	Bates	850	1	61.1		85	10†	40	13	37	7.18		3.00	0.0	9	10	4	17	Darby Fruit Farm.
Appleton City	St. Clair	853	20	61.5	- 3.8	86	21	41	9	42	8.99	+ 2.91	2.25	0.0	13	7	19	5	T. C. Brown.
Arlington	Phelps	695	20								6.90	+ 2.22	1.54	0.0	8	15	5	11	P. W. Andre.
Arthur	Vernon	707	18	61.4	- 3.0	85	10	39	13	31	6.79	+ 0.32	2.63	0.0	10	11	11	9	J. T. Armstrong.
Avalon	Livingston	25	35	58.8	- 5.1	83	21	37	4	29	9.28	+ 4.12	2.00	0.0	17	13	7	11	F. G. Ashbaugh.
Bagnell	Miller	594	15								8.98	+ 4.34	2.50	0.0	12	12	8	11	W. S. Brockman.
Bethany	Harrison	881	20	57.4	- 4.8	85	9	34	13	38	4.90	- 0.25	1.05	0.0	9	15	5	11	W. H. Skinner.
Bolivar	Polk	1,070	22	60.2	- 5.2	84	20	35	14	35	8.24	+ 2.96	1.82	0.0	19	13	13	5	E. Walts.
Boonville	Cooper	600	34								6.70	+ 1.23	2.80	0.0	13	8	3	20	C. Randecker.
Brunswick	Chariton	652	32	60.0	- 3.9	85	10	41	14	34	7.80	+ 2.83	2.10	0.0	19	11	2	18	Louis Benecke.
Clinton	Henry	800	24	61.2		86	20	40	13†	37	10.67	+ 5.22	4.10	0.0	13	11	16	4	Dr. G. W. Meneses.
Columbia	Boone	784	21	59.2	- 5.3	85	10	37	13	31	6.82	+ 1.94	2.70	0.0	15	12	8	11	U. S. Weather Bureau.
Conception	Nodaway	982	26	57.4	- 3.9	80	10†	36	4	35	4.54	- 0.28	0.94	T.	11	8	10	13	Fr. Adhelm Hess.
Darksville	Randolph	826	19																W. H. Broadus.
El Dorado Springs	Cedar	755	5	61.2		85	10	39	13†	40	8.92		2.25	0.0	14	13	7	11	Samuel Graham.
Fairport	De Kalb	920	16								6.34	+ 1.48	2.03	0.0	11	11	5	15	W. H. Lincoln.
Fayette	Howard	725	27	59.4	- 5.0	83	10	40	4†	29	7.64	+ 2.79	1.66	0.0	15	14	4	13	Prof. T. Berry Smith.
Fulton	Callaway	818	19	59.4		85	10†	36	14†	36	6.98	+ 2.23	1.77	0.0	18	2	21	8	Dr. J. L. Brennehan.
Gallatin	Davies	803	18																Dr. W. P. Young.
Glasgow	Howard	618	33								6.67	+ 2.05	3.10	0.0	14	10	9	12	J. J. Shaughnessy.
Grant City	Worth	1,130	18	57.6		82	20†	37	4	39	6.18	+ 1.25	1.14	0.0	12	15	6	10	W. H. Campbell.
Harrisonville	Cass	912	38	59.4	- 4.4	93	21	40	13†	36	8.43	+ 3.68	3.67	0.0	15	9	2	20	A. J. Sharp.
Hazelhurst	Livingston	17	17								7.77	+ 2.84	1.50	0.0	17				W. H. Baker.
Hermann	Gasconade	482	36								6.78	+ 2.39	1.76	0.0	16	10	9	12	C. T. Maushund.
Houston	Texas	1,280	18	60.4	- 4.5	87	11	32	14	40	3.01	- 1.76	1.05	0.0	6	5	19	7	E. Dempsey.
Huntsville	Randolph	790	8								9.50		3.50	0.0	10				F. H. Hammett.
Jefferson City	Cole	628	29	59.2	- 6.2	87	10	37	14	39	8.63	+ 4.19	2.50	0.0	15	14	1	16	Miss Emma Swift.
Kansas City	Jackson	963	21	59.8	- 4.7	82	10	42	3	24	10.92	+ 5.81	3.69	0.0	15	9	10	12	U. S. Weather Bureau.
Kidder	Caldwell	1,017	20	57.7	- 5.1	80	10	37	4	30	8.14	+ 2.18	2.57	0.0	18	10	8	13	J. F. Sharp.
Lamonte	Pettis	863	22	60.0		83	20†	37	14	33	8.70	+ 3.42	2.87	0.0	15	8	13	10	J. R. Wade.
Lebanon	Laclede	1,265	22	60.4	- 5.6	85	10	37	13	36	5.81	- 0.28	1.21	0.0	10	9	13	9	M. W. Serl.
Lexington	Lafayette	813	27	59.4	- 4.8	82	10†	40	13	31	10.05	+ 5.09	3.16	0.0	16	11	1	19	J. W. Keithley.
Liberty	Clay	864	22	60.4	- 3.8	85	10	41	4	35	10.19	+ 4.95	4.30	0.0	16	11	8	12	W. C. Wilmott.
Lockwood	Dade	1,088	16	61.8		90	20	40	13	32	8.30	+ 3.53	1.43	0.0	14	13	5	13	C. S. Crow.
Marshall	Saline	779	20	59.2*	- 4.9	88*	9	39*	14	42*	9.29*		2.40*	0.0	13*	12*	10*	8*	Dr. W. H. Black.
Marshfield	Webster	1,492	2	59.6†		85†	10	35†	13	42†	4.87		0.83	0.0	9	7†	10†	10†	Dr. J. P. Keller.
Maryville	Nodaway	1,160	20	57.0	- 4.9	81	10†	36	4	30	6.37	+ 1.13	1.05	0.0	15	13	2	16	J. R. Brink.
Mount Vernon	Lawrence	1,480	34																Dr. O. H. Brown.
Nevada	Vernon	860	16																C. Jewell.
New Palestine	Cooper	795	18																A. I. Zeigle.
Oregon	Holt	1,113	55	57.1	- 6.2	83	20	34	13	33	7.41	+ 2.57	2.00	0.0	11	13	9	9	Tom Curry.
Osceola	St. Clair	738	11								8.69	+ 1.79	2.70	0.0	15	14	4	13	W. E. Matthews.
Rolla	Phelps	1,092	29	61.0		85	10	39	13†	35	7.51	+ 2.38	2.78	0.0	15	12	3	16	Prof. P. J. Wilkins.
St. Charles	St. Charles	614	32	61.0	- 0.4	84	20†	37	4	47	6.33	+ 2.00	1.42	0.0	11	9	8	14	L. C. Saeger.
St. Joseph	Buchanan	825	39	58.7		83	10	40	13	28	6.60	+ 2.23	2.28	0.0	16	7	10	14	U. S. Weather Bureau.
St. Louis		567	39	60.8	- 5.7	85	20	39	4	38	5.23	+ 0.99	2.30	0.0	15	10	8	13	U. S. Weather Bureau.
Sublett	Adair	1,000	30	57.8	- 4.6	89	28	35	13	36	9.85	+ 4.31	2.00	0.0	10	6	14	11	Lewis Spriggs.
Trenton	Grundy	812	15	59.2	- 4.5	81	28	39	13	29	10.31	+ 5.23	2.78	0.0	17	13	6	12	J. H. Flesher.
Unionville	Putnam	1,072	17	55.8	- 7.4	80	20†	34	4	32	7.46	+ 1.58	1.85	0.0	18	12	4	15	Geo. W. Davis.
Warrensburg	Johnson	883	32	61.0	- 4.2	84	20	40	13	34	5.74	+ 0.84	1.38	0.0	15	11	9	11	A. F. Smithson.
Warrenton	Warren	865	20	59.9	- 4.9	87	20	37	4	36	6.58	+ 1.75	1.63	0.0	16	10	6	15	Dr. John H. Frick.
Warsaw	Benton	700	6	64.0		94	20	35	13†	51	8.71		2.43	0.0	16	11	10	10	Dr. J. R. Smith.
Wheatland	Hickory	920	18								7.27	+ 1.40	1.72	0.0	14	11	11	9	Mrs. S. A. Jackson.

* , * , etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

* Precipitation included in that of the next measurement.

** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.

† Also on other dates.

‡ Separate dates of falls not recorded.

§ Data are from standard instruments not supplied by the U. S. Weather Bureau.

|| Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

¶ Estimated by observer.

||| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—Daily precipitation for May, 1910. District No. 6, Missouri Valley.

Stations.	River basins.	Day of month.																															Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Wyoming.																																			
Arapahoe.	Big Horn.																																		
Barnum.	Powder.	.25									.15			T.	T.	T.					1.00	.15			T.	T.								1.55	
Basin.	Big Horn.	.26				.66	.11								.23						.11													1.37	
Bennett.	North Platte.																																		
B. g. Creek.	do.		.90				.20				.30					.10	.01					.20	.01		.30									2.02	
Casper.	do.																																		
Cheyenne.	South Platte.	.58	.11		T.	.06	.07	T.			.03	T.	.12	T.	.04							.43	.55		.03	.04	.28	T.						2.34	
Chugwater.	North Platte.	.08	.05			T.	.20	T.	T.		.06		.08	.38	T.	T.	.20				T.	1.01	.25	.02	T.	T.	.03							2.36	
Clark.	Clark's Fork.	.03			.05	1.32	.11				T.	T.	T.	.18	.20	.18	.03				T.	.29	.10			T.	.18							2.67	
Cody.	Big Horn.	.05				.10							T.	.10	.15	T.											.08							0.48	
Crystal Lake.	South Platte.	.62	.26										T.	T.	T.	T.	.05				T.	.41	.42	T.	T.	.58	.18	T.						2.52	
Dome Lake.	Tongue.	.60			.40	.40									.20	.60	.40				T.	1.10						.10	.01					3.81	
Douglass.	North Platte.																																		
Dubois.	Big Horn.	.32	.03		.28																	.35		T.	.10	.35			T.					1.14	
Eaton's Ranch.	Tongue.	.40				1.25					.07					.21					.35	.46		.13		.24		T.	.08					3.62	
Echeta.	Powder.	T.	.34			.21	.49	.01			.13				.13	.75	T.					.15					.07	.13						1.99	
Elk Mountain.	North Platte.					T.	T.								.35	T.	.50					.04	.23			.07	.13					.13		2.05	
Encampment.	do.	.54	.26	T.		T.	T.								.35	T.	.50					T.	.20			.17	.03	T.						2.05	
Erway.	do.	.85	.05	.04	.02	.04	.14				T.				.28	.15	.17	.10			T.	.45	.06	T.	.04	.15	.09		T.					2.63	
Fort Laramie.	do.	T.	.41			.04	T.	.14			T.				.10	.04						.21	.04					.10						1.08	
Fox Creek Station.	do.																																		
Gillette.	Powder.	.11	T.				.06				.18			.15	.61	.48	.03					.21						.11	T.					1.94	
Granite Canyon.	South Platte.																																		
Hunters Station.	Powder.	.60				.38							T.	.45	.20	.10	.25				.04	.66	T.	.05	T.	.13	.26		.10					3.22	
Hyattville.	Big Horn.																																		
Kirtley.	Niobrara.	.09					.09								.17	.10	.28					.17												0.90	
Kirwin.	Big Horn.														T.	.10	.30	.60				.60				.25		.50						2.35	
Knowles.	Belle Fourche.	.10				.19	.21				.12				.19	.11	.59	.14		T.							.20		.05					1.90	
Lander.	Big Horn.	.63	T.	T.		.33	.06				T.				T.	T.	T.	.03				.54	.17			.07	.08		T.					1.91	
Laramie.	North Platte.	.43						.04							.10	T.	.02					.30	.19	.02	.05	.31	.44							1.90	
Leo.	do.	.04	.02			T.	T.	.28							.17	.04	.08					.06	.02			.10	.04							0.85	
Lolobama Ranch.	Big Horn.	.20		.05	.50	.87	.05								.10	.10	.30										.05	.10						2.32	
Lovell.	do.					.32							.06		.18	.40	.04					.22	.02			.15		T.						1.39	
Lusk.	Niobrara.														.21	.70	.00				.10	.28		.04										3.33	
Luther.	South Platte.		.85			.10									.50		.40						.37			.60	T.							2.82	
Manville.	Niobrara.	.10			.02		.35				.05	.04			.08	.10	.30	.20					.65		.04		.03							1.96	
Moorcroft.	Belle Fourche.										.06	.10				.03	.65					.10												0.94	
Moore.	North Platte.	.41	.16			.01	.07	.01			T.		.02	.53	T.	T.	.06				T.	.12	.25		.03	.02	.23	T.						1.92	
Newcastle.	S. Fork Cheyenne.						.26					.51				.60	.15					.15	.91	.11	T.			.08		T.				2.77	
Pathfinder.	North Platte.		.01	T.		.13	.05								.39		.03					.01	.07	.17		.18	.26	T.						1.30	
Phillips.	do.	1.00				.25								T.	.20	T.						.41	.50											2.36	
Pine Bluff.	South Platte.																																		
Powell.	Big Horn.	.16				.31									.08	.17	.08	.09				.04				.10								1.03	
Rawlins.	North Platte.	.14	.06			.13	.40	T.			T.				.07	T.	.15				T.	.16	T.			.06	T.							1.17	
Riverton.	Big Horn.																																		
Saratoga.	North Platte.	.16				T.	.12								.15		.13					T.	.13			.47								1.16	
Sheridan.	Tongue.	.64				.25	.04				.03	.05	.09		.17	.21	.04					.08	.12	.02	.01	.03		.14		T.				.01	1.93
Shoshone Dam.	Big Horn.	.15				2.50	.61								.11	.25	.04									.04	.29							4.13	
Soldiers' Home.	Powder.	.80				.27					T.				.05	.18	.15	.40				T.	.67		.01	.05		.13						2.71	
South Pass City.	North Platte.	T.	T.			.10	.30				T.				.04	.20	T.	.46				.30	T.					T.	T.					1.40	
Thermopolis.	Big Horn.	1.37	.01												.27	.39						.20	.15			.04	.05							2.48	
Upton.	Cheyenne.																																		
Valley.	Big Horn.	.40				.60					.18				.12		.18					.39	.08			.02	.13	.09						2.19	
Verona.	Tongue.	.73			.09		.60				T.	T.	.20			.54							.43	T.			.31							2.30	
Wiley.	Big Horn.	.45			T.	2.20	.60								.05	.22	.13	.10					.20				.50							4.45	
Wyncote.	North Platte.	.52	.10			T.	.15				.17		.06	.18		.08		.08					.36			.03								1.65	
Yellowstone Park.	Yellowstone.	.08			.03	.38			.03	.01	.19																								

TABLE 2.—Daily precipitation for May, 1910. District No. 6—Continued.

Stations.	River basins.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Montana—Cont'd.																																		
Dry Creek	Missouri		T.		.24					.53					T. 1.40	T.					.11					.82	.65						3.75	
Dry Wolf Camp	do.	.01	T.		.28					1.02	.07				.14	1.86				.16	.02				.10	.12	.17						3.95	
East Gallatin River	Gallatin	.09			.33					.27					.41	.55	.04					.28					.81	.14	.49				3.41	
Ekalka	Little Missouri														.50	.48	.11																1.19	
Elkhorn	Jefferson	.04			.30				.30	.49	T.				.04	1.05			T.	T.	T.	.01			.14	.30	.62	T.					3.29	
Evans	Missouri			T.						.90					202.30					T.	T.							.01					3.41	
Fallon	Yellowstone										.34				1.11	.80				.06		.02				T.							2.33	
Family	Marias					.70			.90		.68	.03			.16	.40				.37	.01					.47	.02						2.14	
Fish Creek	Jefferson									.65					.27						.32						.60	.60	.20				4.24	
Fishtail Creek	Yellowstone	.63	T.		.64	.07			.07	.27					.35	.07	.20				.13	.71	.05										3.21	
Flathead Creek	do.	.20			.38					.83					.40	.41	.02					.32					1.31	.13	.65	.02			4.67	
Forayth	do.								T.	T.	.10				101.20	.15			T.								1.15	.05	.05			T.	2.80	
Fort Benton	Missouri							.55	.35						.50		.35											.20					1.95	
Fort Shaw	Sun River			.01						.63					.07	.32				.31	.01					T.	T.						1.35	
Foster	Big Horn									.05	.08			.01	.08	1.08	.32				.06						.19	.03	.01				1.91	
Garnett	Musselshell									.75				.10	106.00																		8.60	
Glendive	Yellowstone									T.	.14				.23	.51	.06			T.	T.				.15	.10	.70	.60					1.10	
Goldbutte	Marias									.92	.29				.10	.02				.03	T.	T.					.21						1.57	
Graham	Powder	.26				.06			T.	.09					.07	.50	.22											.32	T.				1.52	
Grayling	Madison					.08									.23	.71				T.	T.					T.	.18	.14					1.84	
Great Falls	Missouri									.42	.08				.05	.25	.12			.10	.80					.40	.40	.50					4.01	
Half Moon Pass	Musselshell	.01								1.00	.38				.02	.78	.23			.03	.13					.20	.11	.25	.33	.13			3.16	
Half Way House	Missouri	.03				.27				.65	T.				.02	.78	.23				.21						.60	.03					2.04	
Harlowton	Musselshell	T.		T.						1.01	.08				T.	.11	T.				.04	.21						.03					1.91	
Hassel	Missouri				.25					.65				.08		.05				.04	.04								.70	.07			1.40	
Havre	Milk River									.63	.07				.24	.29				.01	.06		T.	T.			.03	.01	.04	.01	.01		1.43	
Helena	Missouri				.19	T.			.16	.31					T.	.42				.10	T.					T.	.05	T.	.20				4.62	
Highwood	do.									.90					102.80					.05							.55	.02	.20				2.70	
Homepark	Jefferson	.01				1.04	.06			.60					.23	.08					.04						.26	.38					1.65	
Huntley	Yellowstone										.28					.65	.27										.45						5.35	
Jones Canyon	Gallatin	T.		.61	T.					.73				.10	.33	.85			T.	.29	.05					.41	.23	.03	.72				1.50	
Jordan	Missouri																																2.42	
Klein Smith Creek	Jefferson				.02				T.	.60					T.	.64				T.	T.		.45			T.	.16	.55					2.26	
Lewiston	Missouri				T.					.60	.20				.85	.22											.02	.34	.03				2.40	
Livingston	Yellowstone	.12			.19					.39				T.	.73	.09				.07	.28	.06					.15	.32					5.72	
Lodge Pole Creek	do.	.95		T.	1.20	.41				.41				.10	.40	.80	.30			.10	.60						.35	.10	.10				2.32	
Lonetree	Missouri									.75	.04				.12					T.	.05						.22	.14					0.89	
Lost Horse Creek	Musselshell	.10			.32					.79	T.				.02	.03					.05												2.37	
Malta	Milk River									T.	.29				.05	.44	.01				.08	.01							.06	T.	T.		0.63	
Meadow Creek III	Madison	.30				.08	.05								.05	.03				.02													2.37	
Melstone	Musselshell									.21					.30	1.14	.10				.10												1.66	
Mildred	Yellowstone			T.						.42					.43	.61	T.			.02		.05											1.12	
Miles City	do.					T.	T.			.04					.11	.67	.12			.01	.01		T.				.15	T.					2.42	
Mill Creek	do.									.70	.12				.21	.50	.24										.21	.17	.27				2.64	
Moore	Missouri																																2.72	
Mudd Creek	Jefferson														.15	.54																	3.36	
Norris	Madison	.40				1.05	.01	.05		.06					.09	.08	.01				.20		T.			.05	.25	.06	.33					1.25
Nye	Yellowstone					.28	.07			.05	.42	.06			.70	.50																	1.56	
Olsen Creek	Jefferson					.35	.02	T.		.65					.92																		5.03	
Pipestone Pass	do.	.04													.10	.05				.02	.25												5.10	
Poplar	Missouri					T.	T.			.50	.08				.41	.80	.10				.14	.40					.13	.33					1.83	
Raymond	Yellowstone	.90				1.14	.42			1.02	.13				.11		.92				.26							.42	.84	.78				0.98
Red Lodge	Gallatin			.62						.45	T.				.07	.09	.92				.06	.20						.10	.24	.54				1.89
Reese Creek	Jefferson					.08																											1.97	
Renova	Missouri									.40					.15	.10																	1.67	
Rimoli	Musselshell			T.																	.06	.02		T.			.10	.10	.05				3.73	
Ryegate	Yellowstone																																3.46	
Sedan	do.			</																														

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MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2.—Daily precipitation for May, 1910. District No. 6—Continued.

Stations.	River basins.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Colorado—Cont'd.																																		
Camella	South Platte	*	.25	.20																		.60	.10		T.								1.1	
Can'te Rock	do	.30	.15												.50		.65					.90	.07	.02	.09	.04	.07	.05					2.8	
Cheesman	do	T.	T.	T.	T.			T.					T.	.25	.08	T.	1.60		T.		T.	1.20	T.		T.	T.	T.						3.1	
Cheyenne Wells	Smoky Hill	T.	T.	.02	.02	T.	.26					T.			T.	.15						.21	.51		T.	T.	.56	.81					2.5	
Como	South Platte																																3.4	
Cope	Republican	.87						1.06					.08	.12		.42	.46																3.4	
Corona	South Platte	.17	.05	.29		T.	.04	.12	.06			.08			.11	.04	.11	.69				.83	.55	.06		.32		.10					3.4	
Denver	do	.42	.07	T.				T.	T.		.01				.05	.24	.07	.43		T.		.18	.86	T.	.15	T.	.02						2.5	
Edgewater	do	.62	.62	T.			.02								.03	.25	.45					1.03	T.	.08		.02	T.						2.5	
Fates Pk. Fish H'y	do	.62	.70							T.					.05	.25	.45					1.03	T.	.08		.02	T.						2.5	
Fort Collins	do	.52	.30			.01		T.			.01	T.	1.48	.04	.23	.08	.22					.07	1.35		.45	.03	.04						4.1	
Fort Morgan	do	.60											.31		T.							1.05				.32	T.						2.7	
France	do																			T.		.11	.67	.04		.50	.11						2.7	
Fry's Ranch	do	.65	.38	.01							.07		.02	.03		.08	.07					.41	.17	T.	T.	.19	.01	T.						2.2
Georgetown	do	.36	.18	.93						.01				.39	.10	.39	T.					.41	.17	T.	T.	.19	.01	T.						2.2
Greely	do	*	.49				.19	.02			T.		.12	.23	.11							* 1.27			*	.21								2.7
Hartel	do	.02	.03	.03	T.										T.	.16	T.	.23				.27											0.7	
Hawthorne	do	.54	.59	T.											.53	.04	.64					* 1.67				.14	.07						4.2	
Holyoke (near)	do	.69	.20								.47	.03			.20							.41						.70					.03	2.6
Idaho Springs	do	.15	.40	.05										.15	.34		.47					.08	.72			.10	.15						2.6	
Kosler	do																																	
La Porte	do	.60	.40												.10							1.47				.40	.27							3.2
Le Roy (near)	do	.36	.04		T.	.02	.04			.02		.02		T.		.10	.05					.24	.75	.01		T.	.07	.58						2.3
Longmont	do																																	
Long's Peak (near)	do	1.65	.95		T.			T.							T.	.30						.70	.85		.15	.35	.15							5.10
Moraine	do	.42	.57													T.						.50												1.40
Platte Canyon	do	.40													.22	*	.45					* 1.30				.27		.06						2.70
St. Cloud	do	.54	.36	T.	T.	T.	T.	T.		T.				T.		T.						* 1.63	T.	T.	.32	.72	T.							2.60
Sedgwick	do	.30	.10	.05	.10	.20	.20	.01			.15					.10	.01					.82					.55							2.50
Sill Mine	do	T.	.45	T.	.05	*	.08	T.					*	.50	*	.10						*	.60				T.							1.70
Spicer (near)	North Platte	.04															.37					.50				.40								1.30
Sterling	South Platte	.30	.31		.01							.04		T.		.09	.01					.35	.91	T.		.03	.80							2.80
Waterdale	do	.78	.50		.02	.01				T.		.19	.19	.03	.07	.04						.06	1.17	T.	.05	.28	.09	.06						3.50
Westlake	do	.50	.42											.39	T.					T.		1.20				.32	.21							3.00
Wray	Republican	.90	.50		.12	.13				.11					.51						*	.20				.31	.54							3.30
Yuma	do	.71	.10		.08	.05			T.	T.		.03			.55	.11	.40	.35																2.30
Nebraska.																																		
Ainsworth	Niobrara	.65	.48		.07	.26										.06	.21										.38							2.10
Albion	Loup		.56		.98	.16	.01				.02			.35	.20	.05	.07				.21	.04				.15		.07						2.10
Allamore	North Platte	.75			.15																													1.90
Alma	Republican		.05		.01	.30	.16							.21	.06	.28				.01		.15				.74	.41							2.30
Anoka	Niobrara	.40	.53		.40							.15																						1.40
Ashland	Platte			.22		.50	.60	.25	.02						.09	.16						.13					.08	.68	.01					2.70
Atkinson	Elkhorn	.90	.11		.04	.75	.05			.30						.05					.02	.03												2.20
Auburn	Little Nemaha		.40	.03	.02	.12	.46	.01							.09	.18	.13				.09	.33	.01				1.00	.53	.52		.09		5.10	
Beatrice	Blue				1.27	.01	.39								.12	.58				.05		.39				.20	.32	.68	.34					4.35
Beaver City	Republican	.04	.14			.35	.34					.03		.17	.04				.04		.09				1.23	.26							2.65	
Bellevue	Missouri		.36		.42	.63	.13								.14	.29				.02		.33					.31		.14				3.25	
Blair	do		.45		.42	.63	.13								.14	.29					.15						.57		.17				2.91	
Bloomfield	do					.13						.15			.05	.05	.05				.15												0.85	
Bridgeport	North Platte				.05														.20			.60												1.10
Brokenbow	Loup	.02	.72		.15	.33	.10		.02	.04					.05	.14					.04	1.05	.18				.07	.21					3.13	
Burge	Niobrara	.35			.50																						.27							1.12
Callaway	Loup		.43																			.13				.36								0.93
Cambridge	Republican		.26		.22	.05								.25	.01	.71						.54				1.31	.17							3.53
Canton (near)	North Platte	.36			.02	.23								.65								.28	.06			.05								1.65
Columbus	Loup	.06	.26	.11		.30	1.58	.47							.03		.18					.28	.07											3.42
Creighton	Missouri	.22	.62		.29	.21	.05		.08		.26				.03	.02	.02				.06	.15												2.01
Crete	Blue	.37			1.09	.76	.20								.10	.45						.51					.30		.32	.15				4.16
Culberson	Republican	.05	.75	.02	.05	.21	.99	.17							.16	.40						.05					.60	.79						4.24
Curtis	do	1.10			.11	.83	.44		.13					.04	.41						.04						.83	.90						4.83
David City	Blue		.58		1.10	.91									.05	.18						.35					.05	.16						3.38
Dawson	Great Nemaha	.42			1.03	1.37	.40								.16	.18	.04		.14			.35				*	1.42	.01	.13	.23				5.88
Elsie	Republican	.20	.33	.05	.30	.11	.30		.03		.07				.01	.10										.02	.01	.40						1.94
Enderslake	Loup	.65			.25																					.25								1.15
Ewing	Elkhorn	.24	.10		.80	.24					.20				.08					.04		.18												1.88
Fairbury	Blue	.23			.30	1.60	.21							.22	.38	.08			.06		.80	.03				1.05	.02	1.01		1.38				7.37
Fairmount	do	.17	.13		.21	.46	.46								.08	.08	.09				.24					.29		.32		.66				4.19
Fort Robinson	Ni																																	

TABLE 2.—Daily precipitation for May, 1910. District No. 6—Continued.

Stations.	River basins.	Day of month.																															Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Nebraska—Cont'd.																																			
Minden.	Blue.		20			.95	.02							.01		.06	.05	.10				.01	.08										2.31		
Mitchell.	North Platte.	.53												.04	.59	.10		.35			.20	.09	.23					.05					1.43		
Nebraska City.	Missouri.	.70				1.12	1.08										.18	.35				.04						.36		1.32	.10		5.87		
Norfolk.	Elkhorn.	.52				.87	.48					.06					.09	.10					.03						.18				2.34		
North Loup.	Loup.	.48				.75	.32														.29	.69						.22					2.75		
North Platte.	Platte.	.48	.17		.02	.35	.01				.05	.01				.01	.01					.03	.07						.03				1.95		
Oakdale.	Elkhorn.	.12	.44			.54	.13					.27					.01	.01				.03	.10						.23		.10		2.23		
Omaha.	Missouri.	.55				.45	.85	.04				.04					.07	.13					1.21	1.00									4.09		
Ord.	Loup.	.16				.72	.61																										3.64		
Palisade.	Republican.	.42	.30	.30	.10	.12										.53					.05	.20	.15					.52	.50	.56	.46		6.85		
Pawnee City.	Great Nemaha.	.18				1.42	1.58	.90								.22	.11					.55						.40	.51	.56	.56		4.85		
Plymouth.	Blue.	.47	.25			.38	.05					.06					.06											.33					1.60		
Purdum.	Loup.	.40				.63	.47									.04	.08					.13						.25	.05				2.05		
Ravenna.	do.														.16	.03	.17					.10						.58	1.24	.02			4.15		
Redcloud.	Republican.	.15				1.14	.56									.03	.04					.06						.28	.04	.04		.67		3.40	
Saint Libory.	Loup.	.56				.92	.23														.20	.04						.26				.54		2.75	
Saint Paul.	do.	.31	.52			.30	.15	.02		.01	.54						.01	.01				.01	.31						.01					2.20	
Santee.	Missouri.	.55				.15	.20															.70						.22						1.82	
Sargent.	Loup.	.51				.85	.60															.26							.27					2.62	
Schuyler.	Platte.	.47				.05					.01					.28	.42	.02	.05			.17	.30	.01			.15		.10		.70	.30		4.80	
Scottsbluff.	North Platte.	.30	.20		.65	1.20	.40									.25	.20					.50												3.85	
Seward.	Blue.	.20	.25			.60	.40	.10								.20					.25		.75					.10		1.00				3.45	
Sheridan.	Loup.	.70	.28		.01	.05					.80	.02				.30	.07	.01				.08	.96						.17					3.13	
Sidney.	South Platte.	.85				.70	.75	.10				.20																	.43					1.92	
Springview.	Niobrara.	.53				.43	.67	.05								.05						.03	.14					.64	.12					2.35	
Stanton.	Elkhorn.	.60				.18	.05	.15								.61												.50						2.90	
Stratton.	Republican.															.25	.65											.80	.30					4.29	
Superior.	do.					1.25	.82									.07	.18					.55							.01	.20				2.35	
Tecumseh.	Great Nemaha.	.26				.60	.65	.10				.18				.07	.18					.10												5.48	
Tekamah.	Missouri.	.46				.39	.14					.05	.01			.18	.46				.07	.44						.25	.18	.73		.18		1.16	
Turlington.	Little Nemaha.	.29	.01			.45	.01	.01				.05	.01			.01																		3.25	
Valentine.	Niobrara	.33				1.14	.30								.15		.30				.18	.07												2.81	
Wahoo.	Platte.	.42				.54	.39	.05		.04	.12					.05	.07	.02				.88								.03				3.27	
Wakefield.	Elkhorn.	.19	.70	1.10		.15		.05		.12					.04	.01	.27					.18												2.70	
Walthill.	Missouri.	.48				1.05	.02									.61													.36					2.30	
Watertown.	Platte.	.30				.25	.30									.12	.46				.06	.41							.60	.40				4.39	
Wauneta.	Republican.	.23				.33	.90	1.05			.09																								
Weepingwater.	Missouri.																																		
Westpoint.	Elkhorn.																																		
Winer.	do.																																		
York.	Blue.	.45				1.31	1.83	.02								.07	.26					.08								.12	.32	.26		.31	5.03
Iowa.																																			
Afton.	Grand.	T.	.57			1.20	.30					.40			.16	.12	.42			T.		.52	.37											4.61	
Allerton.	Chariton.	.15	.64			.05	.38	.90			T.	1.16			.27	.01	.09			.06	.08	.50	.28						.02	.26	1.15			6.60	
Alton.	Floyd.	T.	.34			.22	.61				T.	.03				.30	.05					.49												1.88	
Atlantic.	Nishnabotna.	.23				.11	.07				T.	.04				.12	.32	.03			T.	.29								.01	.81			3.37	
Audubon.	do.	.27				.17	.90	.08			T.	.93				.08	.34	.02				.59												2.75	
Bedford.	Missouri.	.57				.14	.85	.38			.01				.13	.13	.20			.18	.05	.38	.32						.12	.50	.14	.01		4.17	
Centerville.	Chariton.	T.	1.40			.16	.57				1.49	T.			.15	.22					T.	.54								1.24	.16			5.87	
Chariton.	do.	T.	1.30			.44	.55				.33				.22	T.	T.			.12	.15	.95	.33							.68	T.		5.07		
Clarinda.	Nodaway.	.56	T.			.95	.80	.09			T.				.03	.27	.46					.48	.92							.10	.18	.08		6.20	
Corning.	do.	.97				.15	.70	.30			T.	.08			.15	.20	.27				.75	.15	.44							.74				4.90	
Corydon.	Chariton.	T.	.38			.02	.32	.90			T.	.50			.27	T.	.11				.05	1.00	.54							.14	.50	T.		4.73	
Creston.	Missouri.	T.	.37	.58		.50	.86	.14			.25				.22	.53					.01	.13	.41	.02						.80				4.82	
Cumberland.	Nodaway.	.16				.16	.70	T.			T.				.01	.52					.19	.08								.91				2.73	
Denison.	Missouri.	.26				.13	.68	.02			T.				.05	.30	.02				T.	.77								.19				2.42	
Elliott.	Nishnabotna.	.66				.22	1.13	.26			.12				.29	.34	.47				.14		.50							T.	1.36	.06	T.	5.60	
Greenfield.	Nodaway.	.37				.07	.94	.25			T.				.10	.50	.15				.31	.29													

TABLE 2.—Daily precipitation for May, 1910. District No. 6—Continued.

Stations.	River basins.	Day of month.																															Total	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Kansas—Cont'd.																																		
Garnett.	Marais de Cygnes.	.45	.45			.68	.92	.22							.74	.14				.13		.28	.12				.54	.92	.09	.02	.03		8.99	
Goodland.	Smoky Hill.														.35		.39			.05		.60											2.55	
Gove.	Blue.	.17				.94	.05																					.72	.18	.72		.95		7.86
Hanover.	do.	T.				1.79	.26	.23			.07						.20	.10			.20	.44	T.										4.03	
Harrison.	Republican.	.26			.01	.89	.37								.19	.05	.68				.39							.90	.25		.04		7.86	
Hays.	Smoky Hill.	.43			.07	.24	.81	.01			T.			.07	.02	.68	.12				T.		.13	.08		T.	.22		.65				3.53	
Hill City.	Solomon.	.47			.04	.10									.35		.45									.08							2.49	
Horton.	Kansas.	T. 1.15				1.15	.49	.45			T. T.				.16	.32	.07			.05	T.	.80	.31					.03	.25	.02	.38	.59	T.	8.22
Hoxie.	Solomon.	T. .23				T.	.85	.03	.14					T.	.36		.35				.09		.35	T.					.12	.05				2.59
Jewel.	Republican.					T.	.70	.95							.20	.07	.43			.03		.48				.59	.48	.06	.89	.06			4.94	
Lawrence.	Kansas.	3.41					1.31	.78	.47		T.				.54	.23	.08					.44	.48					.24	.13	.01		.38	.01	9.51
Lebanon.	Solomon.	.25				1.05	.71								.30	.03	.23				T.	T.						.63	.24				3.21	
Lindsborg []	Smoky Hill.	.28				.40	.74								.28		.10						.79					.17		.90			3.77	
Mankato.	Republican.	.14				.91	.69								.04	.65						.47						.64	.10	T.		.24	3.88	
Minneapolis.	Solomon.	.10			.06	.59	.10	T.							.40	.15	.25				.37	.25		.80			1.24	.33		.49	.01	T.	8.15	
Moran.	Marmaton.	.16	.81			T.	.48	.19	.31						.25	.66	.27				.14		.19	.22			.35	.85		.15	.25		6.26	
Natoma.	Saline.	.29				.80	.50								.60	.40																	3.05	
Norton.	Republican.	T. .32	.02			.59	.08			T.				.13	.43	T.	.32		.07									.97	.24				3.17	
Oberlin.	do.	.25	.13			T.	.49		.05					.05	.28	.02	.45			.17		.42						.45	.66	T.			3.42	
Oketo.	Blue.					1.80	.30	.35			.02				.23	.14				.14		.53	.04		T.			.67	.40	.02	.70	.07	7.56	
Olathe.	Kansas.	.22	.57				.61	.40	.15						.32	.44	.18			.09		.38	1.00					.14	.16			.31	9.57	
Osage City.	Marais de Cygnes.	T. 1.40	.01			T.	2.35	.46							.76	.12	.25			.02	.01	.64	.04	T.				.45	.40	.13			T.	8.04
Ottawa.	do.	T. 1.64				T.	2.35	.49							.99	.49	.23			.10		.87	.28		T.			.04	.40	.25	.02		.11	8.97
Phillipsburg.	Solomon.	.03	.17			.03	.36	.38	T.		.03				.55	.03	.27			.03		.33						.79	.04				3.24	
Plainville.	Saline.					.28	.08	1.56							.40	.62				.18		.25						.27	.44		.05	T.	7.93	
Pleasanton.	Republican.			1.33											T. 1.10						.94		.22	T.		T.		.22			.37		5.33	
Russell.	Smoky Hill.	.42				T.	.38	.72							T. 1.00		.36				.40							.22					4.09	
Saint Francis.	Republican.	.42	.48			T.	.02	.39	.63			T.			.06	.05	.13	.46				.22						.19	.22				2.64	
Salina.	Smoky Hill.	T. .38	T.		.01		.60	.79	T.		.08	T.			T. .25	.28	.11			.18		.20	.27					.42	.05	T.	.85	T.	T.	4.67
Scott.	White Woman.	.30				T.	.06	.95	.04						.26	.40	.02	.56				.21	.18					T.					2.08	
Smith Center.	Solomon.	.38				1.00	.03								.34	.47					.39							1.40	.36				4.37	
Topeka.	Kansas.	.60	.61			T.	1.21	.78	.19		T. T.				.04	.56	.21			.04	1.03	.05	.62		T.			.22	.07	T.		.26	.03	7.52
Valley Falls.	do.	T. 2.10				T.	1.03	.70	.47		T. T.				.46	.25				.08		1.40	.10	.08				.30	.08			.50		8.55
Vinland.	do.	1.50				.90	.76	.49							.48	.52				.06		.63	.41					.28	.05			.28	7.36	
Wakarusa.	Smoky Hill.	.53	T.	T.		T.	.24	.15						.13	.53	.06	.33					.49						T.	.05				3.51	
Wallace.	do.	.05				1.18	.06							.08	.23	.67					.02							.30	.33				1.92	
Wamego.	Kansas.	.50	1.05			T.	1.80	.85	.55						T.	.60	.20				.10		1.00	.50				.60	.85	.05	.10	.10	8.85	
Missouri.																																		
Amoret.	Osage.					.62	.01	.36							.45	.53	.10			T.		.42				T.	.20	.50	T.				7.18	
Appleton City.	do.	.50	1.10			.05	.22	.03							.45	.80				.15		.05	.50					.06	.65			.40	8.99	
Arlington []	Gasconade.			.40	T.	1.49	.46								.30	.15							1.54	T.					.30				6.90	
Arthur.	Osage.	T. .99				.32	.61	.07							.54	.74	T.			.13		.16	.10		T.		.11					6.79		
Avalon.	Grand.	.56	1.64			.05	.95	.07			.43				.54	.13	.23			.07	.17		.70	.18			.10	T.	.45	1.97	.03		9.28	
Bagnall []	Osage.	.40	.62			.80	.50	.20							.24	.48	.06			.18		.50	1.20					.94				.20	8.98	
Bethany.	Grand.	1.05				.09	.83	.83			T.				.24	.28					.36	.75						.47					4.90	
Bolivar.	Osage.	.42	.47	.05		.08	1.82	.28	.01						.47	.87	.14			.25	.01	.30	.30	.41				.03	1.25	.04		.14	8.24	
Boonville []	Missouri.	.74	.12			.56	.28	.22		T.					.38	.32				.18	.02	.02	.92					.38	.04				6.70	
Brunswick.	Grand.																																	
Clinton.	Osage.	.59	.99	.12		.14	.10	.07							.45	.65				.14		.55	.23					.48			.16		10.67	
Columbia.	Missouri.	.15	1.35			.34	.09	.81		.06	T.				.26	.05	.03			.19		.15	.03					T.	.28		.01	.02	T.	6.82
Conception.	do.	T. .41				.17	.94	.44		.14					T. .31	.43				.18		.69	.16					T.			.67	T.	T.	4.54
Darkeville.	Chariton.																																	
El Dorado Springs.	Osage.	.80				.16	.25	.01							.54	.94	.50	.18				.29	1.11	.15				.09	.65			.25		8.92
Fairport.	Grand.	T. .203	T.			.98	.74								.20	.20				.19		.73	.02					T.	.19	.38		.03	T.	6.34
Fayette.	Missouri.	.63	.62			.31	1.61	.66		.04					.30	.04	.31			.08		.62	.80					T.	.19	.38		.03		7.64
Fulton.	do.	.23	.98	.45		.05	1.01	.77	.02		.02	.01			.24	.01	.60			.15	T.	.33	.71					T.	.32		.07	.01	T.	6.98
Gallatin.	Grand.																					</												

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 6, Missouri Valley.

Date.	Wyoming.																Montana.															
	Basin.		Cheyenne.		Fort Laramie.		Lander.		Newcastle.		Pathfinder.		Sheridan.		Yellowstone Park.		Billings.		Dillon.		Havre.		Helena.		Lewiston.		Malta.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
1...	56	28	40	27	43	30	41	31	46	34	55	31	40	32	41	28	50	32	47	30	54	20	52	31	54	30	61	22				
2...	64	36	33	25	49	31	52	31	51	28	56	29	53	33	49	25	58	28	58	28	61	26	58	29	52	23	58	18				
3...	63	32	49	31	60	35	62	29	62	32	70	30	64	30	62	29	67	31	64	33	66	39	67	32	68	30	65	37				
4...	72	39	57	34	54	40	73	38	45	34	76	40	68	44	65	32	71	42	66	36	75	40	69	44	67	40	74	39				
5...	70	40	57	39	64	45	55	37	60	38	65	38	55	47	39	32	66	42	61	35	61	44	62	48	63	40	70	45				
6...	80	44	50	37	50	38	63	41	58	36	61	37	62	39	57	36	74	45	64	31	78	32	73	39	76	37	70	46				
7...	74	45	65	34	73	31	72	37	71	36	71	37	74	38	66	34	82	44	69	35	86	47	74	56	74	37	85	38				
8...	80	47	73	41	81	36	77	44	80	48	80	40	77	47	68	37	84	44	73	36	74	46	78	49	76	36	80	39				
9...	80	50	76	48	80	41	80	40	81	50	81	43	75	45	70	39	82	44	79	37	72	46	78	47	74	40	70	44				
10...	80	57	74	44	80	49	75	48	74	52	84	43	68	45	59	37	70	45	76	35	53	38	58	44	64	37	65	40				
11...	76	46	66	40	69	43	69	36	63	40	75	43	62	39	58	33	69	40	76	36	54	37	66	42	65	37	50	38				
12...	74	45	63	45	73	34	68	38	70	43	72	41	72	35	65	31	76	40	78	38	70	36	71	44	70	35	70	33				
13...	74	48	62	41	72	40	69	39	74	46	70	44	73	44	61	36	78	42	69	37	72	45	72	43	76	37	76	45				
14...	71	40	63	42	74	43	69	37	73	45	68	38	66	40	49	28	68	44	64	34	64	44	56	40	63	37	71	50				
15...	65	38	54	33	59	39	52	34	54	33	69	34	43	31	32	23	46	36	54	31	46	37	40	32	42	30	60	35				
16...	50	32	39	28	39	32	50	29	46	30	43	29	49	29	47	27	60	34	65	32	62	33	60	21	56	27	60	30				
17...	66	30	64	27	69	20	68	23	65	24	68	31	68	26	61	28	72	42	63	33	75	50	72	38	70	30	67	42				
18...	74	40	69	34	80	27	74	30	76	38	74	34	75	35	64	33	80	42	69	34	75	48	74	44	76	32	78	47				
19...	76	45	70	42	79	36	70	44	78	46	74	43	61	42	54	33	72	42	62	34	85	37	86	40	67	31	64	46				
20...	68	42	52	36	51	45	46	39	58	34	67	37	53	38	48	32	62	40	68	36	60	29	56	34	57	34	63	30				
21...	61	37	42	32	56	35	56	32	61	35	49	33	58	38	56	32	68	34	70	37	70	39	68	42	66	35	68	38				
22...	70	40	61	32	72	31	68	31	70	34	67	32	70	33	66	31	76	39	74	40	68	49	78	55	82	38	69	27				
23...	74	49	59	40	67	46	71	39	68	40	65	42	66	42	68	36	72	48	77	40	71	46	77	47	76	39	71	27				
24...	77	50	68	40	75	33	73	46	68	38	70	46	69	34	69	39	74	42	78	41	75	45	80	49	72	41	74	37				
25...	80	50	60	39	76	41	68	43	68	37	74	41	74	41	61	40	78	45	62	36	79	46	67	48	75	43	78	45				
26...	81	45	64	42	70	51	70	36	70	48	68	43	68	46	60	38	76	49	69	38	75	53	71	41	70	42	78	55				
27...	80	45	70	38	83	35	77	38	76	44	76	37	79	40	55	34	74	44	70	36	65	50	56	41	68	43	75	52				
28...	78	46	73	38	77	52	71	40	72	48	76	46	64	37	58	34	72	42	72	38	65	43	64	41	65	33	62	45				
29...	85	41	75	39	87	36	83	36	82	38	83	38	82	35	71	41	88	36	76	39	77	44	78	41	69	36	76	36				
30...	87	45	74	51	82	50	84	45	76	52	80	46	76	45	76	40	83	47	80	40	79	49	82	50	70	39	79	48				
31...	85	50	79	47	87	44	86	41	80	48	84	45	77	44	78	40	77	41	86	42	71	50	79	49	76	32	77	54				
Mns	73.3	42.6	61.3	37.9	68.8	38.4	67.5	37.2	67.0	39.6	70.0	38.4	65.8	38.5	59.2	33.5	71.8	40.9	69.0	35.7	67.9	41.5	67.5	42.4	67.1	35.6	69.8	39.6				

Date.	Montana.				North Dakota.								South Dakota.															
	Miles City.		Poplar.		Berthold Agency.		Bismarck.		Dickinson.		Jamestown.		Williston.		Aberdeen.		Chamberlain.		Huron.		Kadoka.		Lemmon.		Pierre.		Rapid City.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	52	34	55	22	52	28	52	35	49	33	47	30	51	24	50	38	66	32	54	38	45	37	51	34	53	41	43	35
2...	62	32	63	24	62	25	59	24	57	26	69	20	60	26	50	25	63	32	53	33	53	31	58	21	55	32	51	31
3...	67	41	66	37	65	31	62	36	61	23	64	25	64	31	60	24	76	28	58	30	62	30	60	30	60	35	61	29
4...	73	45	69	38	70	38	67	41	63	35	65	28	68	42	67	26	86	34	62	34	55	38	60	37	59	42	52	39
5...	60	45	58	34	58	45	54	40	54	43	65	22	54	44	55	36	47	42	54	42	50	44	50	42	54	44	50	44
6...	62	46	61	43	50	45	48	40	46	38	64	40	53	42	54	41	48	43	46	42	47	43	44	38	48	44	45	38
7...	83	42	83	36	72	37	63	35	71	38	60	25	75	40	60	35	60	40	59	42	58	42	65	40	59	43	62	41
8...	76	53	71	36	71	46	72	46	70	41	70	38	66	42	73	35	86	38	80	35	80	41	73	42	78	42	78	46
9...	76	48	71	39	62	30	63	35	62	32	65	32	67	32	70	40	72	42	72	43	71	46	71	35	72	47	73	47
10...	56	47	58	37	59	34	58	38	55	31	65	36	56	38	61	41	70	46	66	46	62	44	52	40	62	46	55	43
11...	55	42	53	39	78	23	54	35	46	35	69	30	51	33	56	46	55	42	52	39	55	42	47	36	52	40	59	40
12...	71	36	68	25	79	43	62	23	60	24	54	20	62	25	62	26	71	32	58	30	61	40	63	29	62	43	62	39
13...	80	48	80	38	68	50	74	36	75	31	78	23	78	42	70	28	72	40	66	32	72	41	74	34	70	39	67	45
14...	76	51	70	36	70	23	83	49	75	43	80	48	74	36	82	40	74	45	75	44	81	44	80	46	76	49	72	47
15...	51	34	.....	.....	82	43	61	41	53	43	75	35	57	37	64	42	78	46	65	48	68	45	50	39	64	46	55	39
16...	56	34	.....	.....	.....	.....	47	37	46	34	62	36	53	34	62	36	6											

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 6—Continued.

Date.	South Dakota.						Colorado.						Nebraska.																	
	Sioux Falls.		Watertown.		Yankton.		Denver.		Wray.		Alma.		Bridgeport.		Grand Island.		Hay Springs.		Hebron.		Lincoln.		North Platte.		Oakdale.		Omaha.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1...	69	34	58	38	63	39	48	32	58	41	75	46	50	33	72	46	54	33	79	44	76	45	53	34	69	40	74	45		
2...	68	33	52	30	50	36	38	29	48	32	48	37	55	29	44	36	54	31	44	39	54	38	48	32	47	30	55	40		
3...	65	30	60	25	58	30	51	35	56	30	62	26	50	37	60	28	57	29	61	32	60	32	57	28	58	25	58	37		
4...	75	32	63	33	62	37	59	39	51	42	60	47	66	45	56	42	48	30	61	39	63	41	47	43	61	31	62	41		
5...	53	42	54	46	53	44	66	45	77	42	53	46	53	35	62	42	56	43	48	44	53	45	52	45	46	43	52	47		
6...	64	38	50	40	46	43	61	44	63	45	52	38	68	38	49	45	48	38	50	46	48	45	57	45	48	43	48	46		
7...	70	40	65	38	62	43	69	39	65	43	56	44	82	37	56	41	65	40	57	43	58	44	57	41	58	41	55	45		
8...	77	42	79	36	80	40	76	46	82	42	78	31	77	45	74	36	80	40	69	37	71	40	84	38	77	32	70	43		
9...	80	50	71	41	70	48	82	51	83	48	77	47	79	49	73	50	75	45	74	47	75	52	76	49	71	47	73	54		
10...	78	52	65	48	75	44	81	50	82	53	85	55	68	45	75	47	64	46	82	54	82	50	82	48	80	44	79	52		
11...	70	40	56	35	55	42	68	44	73	45	70	47	.....	.....	62	43	65	40	63	47	64	46	60	42	58	42	61	47
12...	72	30	58	26	59	39	70	47	73	45	70	33	73	40	64	36	68	34	63	37	64	40	67	41	61	38	60	42		
13...	70	30	68	26	66	34	66	46	69	48	67	45	70	42	66	44	70	37	67	39	67	38	68	43	70	33	65	42		
14...	72	40	76	36	72	50	66	46	59	49	62	44	68	48	64	44	67	42	60	47	69	52	52	45	70	45	69	51		
15...	73	38	61	45	60	50	65	35	68	43	73	47	63	41	69	46	62	41	58	48	56	50	70	46	66	48	58	51		
16...	60	40	60	45	58	45	52	30	49	37	62	46	48	35	56	47	46	33	54	49	58	46	55	41	57	45	57	48		
17...	65	43	66	39	67	42	67	32	71	31	70	37	70	25	70	42	67	21	58	42	68	44	71	37	69	41	66	44		
18...	85	45	84	50	83	47	71	44	75	37	77	35	80	31	80	40	78	32	71	41	78	43	78	36	83	36	78	48		
19...	78	50	70	40	80	56	76	46	83	43	80	54	80	35	75	52	74	37	70	54	70	57	84	48	81	53	67	58		
20...	72	55	59	38	67	48	63	41	76	47	76	54	68	42	72	54	58	35	77	57	79	57	65	43	65	44	77	58		
21...	78	40	67	45	53	43	41	32	60	38	54	44	46	36	48	42	52	34	57	42	58	47	49	40	50	43	59	50		
22...	78	38	74	32	70	41	64	32	68	34	71	44	71	27	64	36	71	26	67	42	68	48	71	35	69	40	66	48		
23...	69	37	67	37	69	50	64	48	69	42	76	37	69	40	72	39	65	35	71	41	73	43	71	46	70	43	71	49		
24...	66	40	63	38	67	44	66	48	77	42	77	37	73	33	74	36	70	31	71	40	73	43	74	37	71	39	71	48		
25...	74	34	66	30	66	37	67	44	76	43	77	47	73	39	63	48	70	34	72	51	71	50	71	42	71	33	67	45		
26...	72	46	69	36	74	43	73	48	72	54	60	53	76	36	64	49	68	50	61	53	68	49	64	50	76	37	72	50		
27...	74	42	75	43	67	45	80	44	72	47	63	52	76	36	62	50	77	36	61	53	62	54	68	46	67	53	66	57		
28...	76	46	74	56	77	57	78	53	78	49	79	57	76	43	76	56	70	53	78	55	78	56	75	53	75	53	76	57		
29...	77	45	70	44	73	51	80	50	81	63	81	50	83	40	83	54	82	32	75	54	79	52	80	45	77	42	74	57		
30...	78	48	73	39	77	52	79	56	83	61	82	50	81	45	80	55	78	45	76	55	78	51	80	54	82	44	75	52		
31...	78	45	68	45	70	49	85	52	89	43	89	47	80	40	80	48	81	40	78	48	80	49	87	44	79	40	74	56		
Means	72.1	40.8	65.8	38.7	66.1	44.2	66.8	42.8	70.5	43.8	69.7	44.4	69.1	38.3	66.6	44.3	65.8	36.9	65.5	45.8	67.8	46.7	66.9	42.5	67.2	40.9	66.3	48.6		

Date.	Valentine, Nebr.		Iowa.						Kansas.						Missouri.											
			Clarinda.		Shiley.		Sioux City.		Colby.		Concordia.		Salina.		Topeka.		Wakeeney.		Columbia.		Kansas City.		St. Louis.		Unionville.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	49	32	72	43	68	37	69	43	67	44	74	48	76	50	71	53	78	46	73	53	70	52	71	54	70	44
2...	49	32	49	48	49	35	49	34	54	32	57	41	50	42	62	45	60	37	72	43	65	45	80	42	56	50
3...	57	28	60	36	61	28	57	28	55	27	61	38	58	41	58	43	57	39	59	42	56	42	57	42	58	40
4...	50	39	62	36	65	29	62	38	50	43	58	47	59	42	58	46	51	43	60	42	58	45	59	39	62	34
5...	49	36	49	40	55	31	53	43	75	47	53	46	54	48	52	48	65	49	59	43	52	47	62	42	60	37
6...	53	42	46	44	45	42	47	43	62	45	52	47	53	48	50	46	57	46	50	46	48	44	57	48	52	42
7...	58	42	49	42	65	41	61	44	64	59	43	57	44	54	43	50	44	49	45	47	44	55	46	56	46	
8...	82	40	70	38	71	33	72	41	83	35	70	40	70	38	69	42	80	39	64	44	67	43	57	45	58	42
9...	71	46	76	43	71	38	71	50	84	52	75	53	79	46	76	54	77	53	77	46	77	55	78	52	76	45
10...	72	44	79	46	71	45	76	46	88	45	86	56	88	46	85	57	80	51	85	54	82	58	78	60	74	50
11...	55	37	61	46	55	38	57	42	72	44	68	48	83	52	74	52	79	48	72	52	75	53	70	51	62	48
12...	63	35	64	39	68	31	59	38	72	40	66	41	66	39	64	44	68	40	62	44	63	46	63	48	56	40
13...	70	41	65	33	64	29	65	32	63	41	67	44	71	40	66	43	65	48	64	37	66	47	64	46	64	38
14...	64	47	72	35	72	34	71	49	54	39	62	47	65	49	66	46	55	47	68	39	65	50	66	47	68	42
15...	66	46	51	49	56	46	56	49	71	44	60	49	61	48	56	50	68	46	56	50	59	51	63	50	58	46
16...	46	38	61	49	60	49	55	47	63	38	57	46	52	42	66	50	62	42	65	51	69	51	67	52	56	47
17...	68	38	65	43	61	45	65	44	68	32	69	41	63	42	66	44	68	36	60							

Climatological Data for May, 1910.
DISTRICT No. 7. LOWER MISSISSIPPI VALLEY.

ISAAC M. CLINE, District Editor.

GENERAL SUMMARY.

Temperature conditions were generally mild at the opening of the month, but from the 2d to the 4th in the western and 4th to 9th in the central and eastern portions of the district, cool weather for the season prevailed, and during this period the lowest temperatures of the month were recorded in many localities. Warm weather prevailed from the 9th to 13th, when maximum temperatures of 90°, or higher, were recorded in all parts of the district. At many stations, especially in the central portion, the monthly maximum occurred on the 10th. From the 13th to 18th another cool wave overspread the district, causing temperatures below freezing in the mountainous portions of the Colorado and New Mexico areas. From the 18th to 27th, temperature conditions were moderate and the month closed with warm weather in all portions of the district. The maximum temperatures were generally above 90°, and the monthly maximum was recorded in many localities on the 29th, 30th, or 31st.

Precipitation was generally in the form of snow in the more elevated portions of the Colorado area and rain elsewhere, except that there was some snow at a few mountain stations in the New Mexico area. Periods of precipitation were not well defined. Showers occurred almost every day, except that from the 7th to 11th in the western and 8th to 14th and 26th to 29th in the eastern portions of the district, there was very little or no rain. In Louisiana practically no rain occurred during the first 8 days of the month. In the Kansas area precipitation occurred at one or more stations on every day of the month, except on the 9th. Taken as a whole, the precipitation was well distributed and sufficient for agricultural needs.

TEMPERATURE.

Monthly mean temperatures were below the normal, except over a small area in northern Louisiana and in the extreme western portion of the Colorado area. The greatest deficiency, more than 4°, occurred in the western and central portions of the Kansas area, the greater portion of the Missouri area, and the northwestern portion of Arkansas; elsewhere, the deficiency ranged from 0.4° to 3.9°. Over those portions of the district where the temperature was above the normal, the excess did not exceed 2°, and was generally less than 1°. The maximum temperature reached, or exceeded, 95° at some stations in each State, and the highest recorded was 100°, at Alva, Okla. The minimum temperatures for the several States were below 40° generally, and in the mountainous portions of the Colorado and New Mexico areas were below 20°. The lowest temperature recorded was 9°, at Lake Moraine, Colo. Minimum temperatures of 12° and 13° were recorded at Buena Vista and Leadville, Colo., respectively, and a minimum temperature of 18° was recorded at Elizabethtown, N. Mex.

Monthly mean temperatures and departures from the normal for the various States and parts of States are reported as follows: Colorado area, 52.7°, -0.4°; New Mexico area, 59.6°, -0.3°; Texas area, 64.4°, -3.6°; Kansas area, 61.2°, -3.7°; Oklahoma area, 65.5°, -2.2°; Missouri area, 61.9°, -4.0°; Tennessee area, 64.6°, -4.4°; Arkansas area, 66.0°, -3.7°; Mississippi area, 68.8°, -3.1°; Louisiana, 72.6°, -1.2°.

PRECIPITATION BY DRAINAGE AREAS.

Arkansas River and tributaries.—Considered as a whole, the Arkansas Basin received more than the normal amount of precipitation for May. There were marked excesses, especially over the north-central and lower portions of this drainage area, while over the south-central and upper portions there were some large

deficiencies. Over the headwaters of the Arkansas in Colorado, the precipitation from 33 stations averaged 1.59 inch, being about 0.3 inch below the normal. Over those stretches of the Arkansas Valley proper, that lie in Kansas and Oklahoma, the amounts from 40 stations averaged 3.91 inches and the average deficiency was about 0.8 inch. The precipitation was below the normal at all stations in the Cimarron Valley. The amounts from 17 stations averaged 2.63 inches, and the average deficiency was about 1.6 inch. The precipitation was unevenly distributed over the headwaters of the Canadian in New Mexico, where the amounts from 34 stations averaged 0.65 inch, being about 0.8 inch below the normal. Over those stretches of the Canadian Valley that lie in Texas and Oklahoma, the precipitation was below the normal, except at 1 station; the amounts from 32 stations averaged 3.29 inches and the average deficiency was about 2 inches. Heavy precipitation occurred generally over the Verdigris and Neosho valleys. The amounts from 10 stations in the Verdigris Valley averaged 6.34 inches, being about 1.2 inch above the normal. Over the Neosho Valley the amounts from 13 stations averaged 7.96 inches and the average excess was 2.5 inches. The precipitation was generally heavy over that portion of the Arkansas Basin below the Oklahoma-Arkansas line, where the amounts from 16 stations averaged 7.49 inches, being about 1.8 inch above the normal.

Red River and tributaries.—Less than the normal amount of precipitation occurred over the Red River Basin, except in Arkansas and Louisiana where there was an excess. Over the stretches of this basin that lie in New Mexico, Texas, and Oklahoma, the amounts from 44 stations averaged 3.02 inches, and the average deficiency was about 1.8 inch. Below the Texas-Arkansas line heavy precipitation was general, a few stations reporting more than 8 inches and 1 station reported 13 inches. The amounts from 18 stations averaged 6.78 inches, being about 3.0 inches in excess of the normal.

Mississippi, south of St. Louis, and small tributaries.—More than the normal precipitation occurred over this drainage area, except in scattered localities where there were small deficiencies. In the immediate Mississippi Valley, the amounts from 46 stations averaged 4.57 inches, being about 0.3 inch above the normal. A few stations reported more than 7 inches. There was a slight excess in the Valley of the Meramec. The precipitation was below the normal over the western portion of the headwaters of the White River and was above elsewhere over this valley; the amount from 20 stations averaged 5.60 inches, being about 0.2 inch above the normal. Heavy precipitation occurred throughout the Yazoo Valley; the amounts from 27 stations averaged 5.30 inches and the average excess was about 1.1 inch. Over the Valley of the Big Black, the precipitation averaged 3.47 inches, being about 0.4 inch below the normal. General, heavy precipitation occurred over the Ouachita Valley; several stations reported more than 7 inches and 1 station more than 10 inches; the amounts from 19 stations averaged 6.60 inches, being about 1.4 inch above the normal.

Louisiana coastal plain.—Heavy precipitation occurred generally over the western and middle portions of this area, while over the eastern portion the amounts ranged from slightly below normal to about 2 inches above. The amounts from 26 stations averaged 5.11 inches, which is about 1 inch above the normal.

Monthly precipitation and departures from the normal for the various States and parts of States are reported as follows: Colorado area, 1.59, -0.33; New Mexico area, 0.78, -0.80; Texas area, 2.45, -1.24; Kansas area, 4.73, +0.22; Oklahoma, 3.90, -1.77; Missouri area, 4.61, -0.19; Tennessee area,

3.34, -0.62; Arkansas, 6.56, +1.36; Mississippi area, 5.40, +1.34; Louisiana, 5.68, +1.49.

SNOWFALL.

Moderately heavy snow fell in parts of the mountainous portions of the Colorado area and light snow over the mountains of the New Mexico area. A trace of snow occurred at Goodwell, Okla., and Texline, Tex. The average snowfall (in inches) for the various States and parts of States during the month, derived from the records of such stations as reported snow, is as follows: Colorado area, 0.8; New Mexico area, 0.3; Texas area (1 station), trace; Oklahoma (1 station), trace.

RIVERS.

No floods of consequence occurred. The upper Arkansas, the Cimarron, and the Canadian rivers were generally low. At Great Bend, Kans., the Arkansas was dry throughout the month. Heavy rains, over the headwaters of the Neosho during the first decade, caused freshets in that stream. About \$500 damage resulted to the growing crops in the vicinity of Iola, Kans., where a stage of 9.9 feet was reached on the 8th. The lower Arkansas was relatively low during the first half of the month, but was higher during the latter half. The upper White was at a low stage during the first and second decades, and high during the third decade. The lower White was relatively high during the greater part of the month.

Changes were slight in the upper Red River, but there was a general rise through Arkansas and Louisiana during the last decade.

No material changes occurred in the Ouachita during the first and second decades, but during the last decade there was a rise of 21 feet at Camden.

Below St. Louis, the Mississippi rose slowly after the middle of the month and was rising at all stations on the 31st.

NOTES.

New Mexico.—Albert: Notwithstanding the winter moisture has held out well, we have had a dry spring, and the country is becoming dry. Fort Union: Crops and ranges are much in need of rain. Logan: Weather has been hot and dry, conditions being unfavorable for crops where irrigation can not be used. Rociada: The heat during the latter part of the month melted the snow on the mountains and streams are running high.

Kansas.—Conditions in the western counties were favorable for wheat, alfalfa, and barley. In the eastern counties, conditions were favorable for wheat, oats, and alfalfa, but were very

unfavorable for corn, much of which had to be replanted. Farm work progressed favorably in western, but was much retarded by rain in the eastern counties. Conditions were generally favorable for transportation interests and building operations.

Missouri.—A severe local storm, with the characteristics of a tornado occurred at Pierce City, in the extreme southwestern part of Lawrence County, about 5:30 p. m., on the 27th. Three persons, who observed the storm, state that there was a well-defined funnel-shaped cloud. The storm moved toward the northeast, through the eastern part of the town. The path of the storm was from 200 to 280 yards in width. No lives were lost and but 1 person was injured. The amount of damage sustained is estimated at about \$15,000.

Over that portion of Missouri in District No. 7, reports indicate that the weather of the month was very unfavorable for most outdoor occupations and farming operations were much behind at the close of the month. Frequent showers retarded cultivation and continuous low temperatures were unfavorable for the germination of seed. The season is the most backward for years.

Tennessee.—Memphis: This was the coldest May, except 1907, during the last 40 years. The precipitation was below the normal, but it was well distributed. Dresden: A severe local storm occurred in Weakley County on May 23, some buildings being destroyed and much timber blown down.

Mississippi.—Severe hailstorms occurred in Adams, Leake, and Noxubee counties during the night of the 7th. In Noxubee County, the storm approached the proportions of a tornado. Mr. J. H. Scott, Section Director, Vicksburg, Miss., reports as follows:

From Natchez, Adams County, in the southwestern portion of the State, to Macon, Noxubee County, on the eastern boundary, is the distance of approximately 200 miles, and the storm traveled this distance in a direction a little east of northeast, in one and one-half hours, or at a rate of about 130 miles per hour. The hailstorm occurred at Natchez about 8:30 p. m., central time, while at Macon it was 10 p. m. Lake County is almost on a direct line between Natchez and Macon. In Adams and Lake counties the hailstones were large and the fall heavy, doing considerable damage to crops, but no damaging winds accompanied the storm. Near Macon, however, the hailstorm was equally severe and the accompanying winds approached tornadic violence. Large trees were uprooted and broken off, portions of houses were blown away, and barns were demolished. The path of destruction is described as being one to two miles in width. The damage to houses in the town of Macon was small, being estimated at about \$5,000. No accurate estimate of the damage to shade and forest trees and farm buildings was obtained, but it probably exceeds this amount. There were no fatalities.

TABLE 1.—Climatological data for May, 1910. District No. 7, Lower Mississippi Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		
Colorado.																			
Blaine	Baca	3,935	18																M. M. Myers.
Buena Vista	Chaffee	7,955	10	48.8		76	20	12	22	48	0.47		0.45	6.0	2				C. A. Short.
Calhan	El Paso	6,700	3	50.7		79	31	25	2	33	1.74		0.43	5.0	10	12	12	7	H. B. Rice.
Canon City	Fremont	5,329	22	59.4	+ 0.2	90	31	30	22	44	0.86	- 1.06	0.48	T.	3	17	11	3	Thos. J. Tynan.
Colorado Springs	El Paso	6,098	30	52.1		81	31	23	17	37	1.44	- 0.99	0.49	0.0	12	12	11	8	Colorado College.
Cripple Creek	Teller	9,396	9								1.82		0.60	11.0	8				F. G. Willis.
Cuchara Camps	Huerfano	8,200	3								1.24		0.48	8.0	7	10	9	3	Geo. A. Mayes.
Eads	Kiowa	4,209	3																W. H. Lauck.
Fairview	Custer	9,500	1								3.09		1.47	26.9	9	11	14	6	Elizabeth L. Gray.
Florence	Fremont	5,185	1																W. G. Fish.
Garfield	Chaffee	9,510									2.26		0.65	10.0	11	22	8	1	Lloyd N. Felton.
Glen Eyrie	El Paso	6,500	18	51.2	- 1.7	85	31	21	17	53	1.48	- 1.15	0.49	0.0	10	7	19	5	C. Nickell.
Hamp	Elbert	5,400	17	52.0	- 1.6	83	31	26	2	41	1.12	- 0.90	0.39	2.5	7	14	8	9	W. Hamp.
Hermit Lake	Custer	10,000									3.46		0.70	18.0	10	17	6	8	John E. Graham.
Hoehe (near)	Las Animas	5,700	18	57.3	+ 0.3	98	31	24	17	53	2.02	+ 0.23	0.94	T.	6	22	2	7	S. W. DeBusk.
Holly	Prowers	3,380	15	60.3	- 1.8	92	31	33	17	47	2.25	+ 0.41	1.40	0.0	5	14	12	5	R. I. Arneson.
Lake Moraine	El Paso	10,265	16	39.1	- 0.9	66	31	9	17	34	3.26	- 0.03	0.71	30.0	13	9	12	10	Clyde C. Mc Reynolds.
Lamar	Prowers	3,592	20	61.2	- 1.7	94	31	35	3	48	2.58	+ 0.74	1.35	0.0	4	12	17	2	J. T. Lawless.
Las Animas	Bent	3,899	42	61.8	0.0	93	31	31	17	46	3.39	+ 1.54	1.96	0.0	6	13	6	12	F. M. Tague.
La Veta Pass	Costilla	9,000									0.40		0.40	5.0	1	22	0	9	Norman R. Lively.
Leadville	Lake	10,245	14	41.2	+ 1.6	69	30	13	17	37	0.95	- 0.25	0.24	3.8	13				U. S. Weather Bureau.
Limon (near)	Elbert	5,360	3	51.1		80	31	23	2	38	1.87		0.43	0.0	8	16	11	4	John Leshar.
Marshall Pass	Saguache	10,846	7								0.38		0.25	0.8	2	14	14	3	W. D. Lillard.
North Lake	Las Animas	8,700									1.02		0.41	4.0	7	18	9	4	James W. Ingmire.
Pueblo	Pueblo	4,734	22	58.2	- 1.3	89	31	33	17	37	1.03	- 0.71	0.50	T.	10	12	11	8	U. S. Weather Bureau.
Rockyford (near)	Otero	4,177	21																P. K. Blinn.
St. Elmo	Chaffee	9,500									1.64		0.44	5.0	11	17	13	1	Daniel Clark.
Salida	do	7,035	12	52.0	+ 0.1	86	31	24	17	46	0.79	- 0.18	0.46	T.	3	24	3	4	M. D. L. Buell.
Santa Clara	Huerfano	8,250	15	50.7	+ 0.5	81	31	26	2	37	2.88	- 0.17	0.80	12.0	9	8	19	4	Lincoln Morris.
Sheridan Lake	Kiowa	4,065	9	57.6		91	11	22	17	50	1.20		0.70	0.0	4	17	1	13	Howard Gamble.
Stonewall	Las Animas	8,000	4								0.95		0.69	T.	5	8	16	7	J. W. Shouse.
Trinidad	do	5,994	14								0.43	- 1.52	0.12	4.0	10	20	6	5	Mrs. Maggie Butler.
Victor (near)	Teller	10,100	6	48.2		77	30	20	22	36	1.78		0.53	5.0	7	17	13	1	Fred Jont.
Vilas	Baca	3,935	19								1.39	- 0.75	0.94	0.0	3	11	16	4	Carrie Konkel.
Westcliffe	Custer	7,894	16	49.2	+ 0.6	82	31	21	17	45	1.05	- 0.51	0.43	6.0	5	12	10	9	Zack Jordan.
Winfield	Chaffee	9,765									0.85		0.27	4.0	15	4	22	5	John G. Payne.
Wortman	Lake	11,250	9								1.40		0.53	27.5	6	8	15	8	Geo. C. Wortman.
New Mexico.																			
Abbott	Mora	5,771		64.6		90	30	38	1	40	0.27		0.12	0.0	4	10	15	6	El Paso & Southwest R. R.
Albert	Union	4,700	19	63.9	- 0.4	95	30	38	3	44	0.20	- 0.82	0.10	0.0	4	11	17	3	Andrew Kneil.
Arch (near)	Roosevelt	4,634	1	58.8		90	12	30	13	45	1.76		0.65	0.0	4	17	2	12	Wm. A. Elliott.
Aurora	Colfax	8,849									0.40		0.24	1.5	5	0	28	3	Miss Juanita Lucero.
Bell Ranch	San Miguel	4,500	11	64.3		97	30	33	21	56	0.18	- 1.57	0.17	0.0	2	8	18	5	C. M. O'Donel.
Black Lake	Colfax	8,348									0.21		0.12	0.0	3	5	21	5	Ralph T. Martinez.
Cabeza	San Miguel	5,406									0.25		0.07	0.0	5	9	15	7	El Paso & Southwest R. R.
Campana	do	4,493									0.09		0.02	0.0	5	6	17	8	Do.
Chacon	Mora	9,000									0.56		0.18	0.0	5	2	29	0	Alfredo Lucero.
Cimarron (near)	Colfax	6,385	6	55.9		85	28	29	17	42	0.72		0.33	0.0	6	11	11	9	Wm. French.
Clayton	Union	5,178	5	60.7		91	10	33	22	44	1.80		0.57	0.0	8	16	12	3	Dr. W. W. Chilton.
Clovio	Curry																		A. Mendenhall.
Cuervo	Guadalupe	4,849		69.0		98	31	39	3	40	T.		T.	0.0	0	22	8	1	El Paso & Southwest R. R.
Dawson	Colfax	6,396									1.91		0.90	0.0	3	9	16	6	Do.
Dorsey (near)	do	6,000	8	57.4		87	31	32	7	44	1.94		0.63	T.	6	13	13	5	Geo. T. Lambert.
Elizabethtown	do	8,465	4	47.2		81	28	18	17	51	0.64		0.25	0.0	4	15	14	2	Miss Mabel Carrington.
Folsom	Union	6,399	10								2.22		0.71	5.0	8	13	11	7	David Rope.
Fort Union	Mora	6,835	50	54.9	- 1.7	88	28	27	23	47	0.40	- 1.20	0.25	0.0	2	21	2	8	M. C. Needham.
Hayden	Union	4,444	1																Geo. L. Cook.
Johnson Park	Colfax	6,722									1.60		0.70	0.0	6				A. J. Melochie, jr.
Lake Alice	do	7,160	1								T.		T.	0.0	0	23	5	3	Raton Water Co.
Logan	Quay	3,851	4	63.3		98	30	35	3	56	0.43		0.39	0.0	2				John B. Reneau.
Los Alamos	San Miguel	6,789	5								0.41		0.17	T.	5	9	19	3	Wm. Frank, jr.
Lykins (near)	Roosevelt										0.86		0.32	0.0	6				J. G. Buchanan.
Maxwell (near)	Colfax	5,804	3								0.28		0.19	0.0	3	17	10	4	D. N. Jackson.
Melrose	Curry	4,400	2	63.8		94	30	34	23	46	0.30		0.28	0.0	3	9	20	2	Miss Lois E. Porter.
Miami Ranch	Colfax	6,000	2	56.8		85	30	30	17	44	0.00		0.00	0.0	0	6	16	9	Farmers' Devel. Co.
Montoya	Quay	4,335									0.65		0.20	0.0	6	11	11	9	El Paso & Southwest R. R.
Nara Vira	do	4,225	4	63.0		96	30	37	3	48	0.65		0.25	0.0	4	13	3	15	Willard Belknap.
Passamonte	Union										2.15	+ 0.36	0.98	1.5	7	23	7	1	J. J. Heringa.
Raton	Colfax	6,662	12	56.9	0.0	87	31	30	17	40	0.52		0.27	0.0	4	8	21	2	Prof. R. C. Crum.
Rociada	San Miguel	8,200	6	51.8		83	28	26	17	49	0.69		0.31	0.0	7	0	19	12	Chas. F. Rudolph.
Roy	Mora	5,834									0.69		0.24	0.0	4	9	12	10	El Paso & Southwest R. R.
San Jon	Quay	4,200	3	65.0		97	30	38	7	46	0.39		0.10	0.0	6	13	8	10	Jesse T. White.
Solano (I)	Mora	5,622	1	59.1		90	27	30	17	43	0.36		0.10	0.0	6	13	8	10	F. M. Hughes.
Springer	Colfax	5,857	14	59.6	+ 0.8	96	28	29	17	58	0.50	- 0.78	0.50	0.0	1	17	14	0	Atch., Top. & S. Fe.
Taylor	do	5,661									0.95		0.25	0.0	8	17	4		

TABLE 1.—Climatological data for May, 1910. District No. 7—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
Texas—Cont'd.																			
Memphis.....	Hall.....	2,067	5	66.6 ^a	—	96 ^a	10	42	31	50 ^a	2.38	—	1.00	0.0	8	11	13	7	Ft. Worth & Denver Cy. Ry.
Miami.....	Roberts.....	2,743	4	64.0	—	95	10	41	31	43	2.16	—	0.62	0.0	12	10	16	7	J. E. Kinney.
Mobeetie.....	Wheeler.....	—	1	—	—	—	—	—	—	—	2.50	—	2.05	0.0	3	12	12	5	R. A. Choate.
Nasaareth.....	Castro.....	—	4	62.2	—	95	30	32	4	44	1.03	—	0.33	0.0	6	24	1	6	Rev. P. A. Kaelin.
Ochiltree.....	Ochiltree.....	—	2	—	—	—	—	—	—	—	1.57	—	0.50	0.0	6	—	—	—	S. J. Allen.
Pampa.....	Gray.....	3,226	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	B. E. Finley.
Paris.....	Lamar.....	592	21	68.4	— 2.7	94	30	45	8	39	4.31	— 0.18	1.80	0.0	9	11	5	15	Robert A. Miller.
Plemons.....	Hutchinson.....	—	3	60.2	—	94	10	37	31	47	1.19	—	0.62	0.0	7	16	9	6	C. S. Solomon.
Quanah.....	Hardeman.....	1,563	5	66.0	—	92	30	41	17	37	3.95	—	1.70	0.0	5	19	3	9	Wm. H. Crawford.
Ringo Crossing.....	Hopkins.....	—	—	64.0	—	95	91	37	3	53	4.40	—	1.52	0.0	5	15	3	13	H. J. Palmer.
Romero.....	Hartley.....	—	—	64.0	—	95	91	37	3	53	4.40	—	1.52	0.0	5	15	3	13	R. S. Chamberlain.
Sherman.....	Grayson.....	745	17	68.5 ^b	— 3.5	90 ^b	29	42 ^b	4	28 ^b	3.18 ^b	— 2.08	0.96 ^b	0.0	10 ^b	9 ^b	8 ^b	12 ^b	R. A. Gibbs.
Sulphur Springs.....	Hopkins.....	530	18	68.7 ^c	— 3.7	92 ^c	30	47 ^c	8	36 ^c	1.10	— 3.34	0.34	0.0	6	10 ^b	9 ^b	10 ^b	O. M. Pate.
Texas.....	Dallam.....	4,694	5	—	—	—	—	—	—	—	1.75	—	0.85	—	4	19	6	6	Ft. Worth & Denver Cy. Ry.
Tulia.....	Swisher.....	3,501	12	61.8	—	96	30	40	31	43	2.65	—	0.85	0.0	10	1	24	6	Lou Mulhall.
Wichita Falls.....	Wichita.....	958	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	John Gould.
Winfield.....	Titus.....	—	—	—	—	—	—	—	—	—	2.50	—	1.17	0.0	6	13	7	11	J. C. Bostick.
Kansas.																			
Anthony.....	Harper.....	1,329	13	63.2	— 2.4	96	10	42	17	44	4.29	— 0.09	1.44	0.0	10	5 ^b	11 ^b	13 ^b	R. H. Beebe.
Ashland.....	Clark.....	1,951	22	62.6	—	99	10	38	8	46	2.09	— 1.04	0.68	0.0	10	5	9	17	C. W. Carson.
Burlington.....	Coffey.....	1,010	17	61.1	— 5.2	89	10	39	81	39	7.72	+ 2.83	1.76	0.0	14	3	19	9	O. E. Sanford.
Chanute.....	Neosho.....	940	6	61.8	—	85	11	38	8	34	10.74	—	1.60	0.0	14	8	12	11	Chase W. Brown.
Cimarron.....	Gray.....	2,700	4	58.8 ^c	—	91 ^c	10	33 ^c	8	49 ^c	1.43	—	0.35	0.0	8	2 ^c	18 ^c	8 ^c	Fred Mallonee.
Coldwater.....	Comanche.....	2,090	13	62.4	— 3.6	97	10	38	17	40	1.04	— 1.94	0.28	0.0	7	16	3	12	J. L. Stanley.
Columbus.....	Cherokee.....	898	20	62.4	— 3.5	89	30	39	81	33	6.77	+ 0.43	1.60	0.0	17	13	5	13	O. E. Skinner.
Coolidge.....	Hamilton.....	3,346	13	59.0	— 4.4	91	9	31	18	52	2.24	— 0.14	1.30	0.0	5	14	10	7	W. R. Padley.
Cottonwood Falls.....	Chase.....	1,234	6	60.3	—	89	10	38	14	36	5.65	—	1.52	0.0	10	11 ^a	5 ^a	14 ^a	E. B. Greene.
Council Grove.....	Morris.....	1,191	1	59.9	—	88	10	37	81	36	6.15	—	1.75	0.0	10	9	4	18	Jas. Sharpe.
Cunningham.....	Kingman.....	1,680	20	62.0 ^a	— 3.1	96	30	37 ^a	8	44 ^a	3.51	+ 0.06	1.40	0.0	9	8	12	11	U. S. Weather Bureau.
Dodge City.....	Ford.....	2,513	36	59.4	— 4.1	94	30	36	17	41	1.17	— 2.17	0.33	0.0	10	10	11	10	W. Y. Miller.
El Dorado.....	Butler.....	1,291	8	61.2	—	89	10	40	8	38	6.36	—	2.00	0.0	11	11	9	11	Martin Musil.
Ellinwood.....	Barton.....	1,788	35	60.4	— 3.9	92	31	35	8	43	2.03	— 1.41	0.72	0.0	12	4	17	10	W. H. Boyles.
Emporia.....	Lyon.....	1,138	29	59.0	— 5.9	88	10	36	8	38	9.62	+ 4.56	2.26	0.0	13	8	10	13	T. C. Peffer.
Eureka.....	Greenwood.....	1,093	14	61.6	—	88	10	40	81	42	5.91	+ 0.35	1.72	0.0	15	8	11	12	J. McDaniel.
Fall River.....	do.....	925	14	62.0 ^a	— 2.9	90 ^a	30	38 ^a	8	39 ^a	8.84	+ 3.48	2.60	0.0	17	11	10	10	Frank Swink.
Fargo.....	Seward.....	—	1	—	—	—	—	—	—	—	0.91	—	0.22	0.0	7	12	7	12	B. W. Holmes.
Fredonia.....	Wilson.....	864	7	62.1	—	89	30	38	8	36	6.38	—	1.46	0.0	17	11	4	16	R. F. Stocks.
Garden City.....	Finney.....	2,836	21	60.6	— 2.8	93	30	35	71	42	2.28	— 0.06	0.70	0.0	9	13	11	7	J. A. Pritchard.
Great Bend.....	Barton.....	1,850	1	—	—	—	—	—	—	—	3.36	—	1.44	0.0	12	16	0	15	C. C. Raymond.
Greensburg.....	Kiowa.....	2,235	3	60.1 ^a	—	94 ^a	30	36 ^a	40	81	3.84	—	0.52	0.0	5	14 ^a	1 ^a	12 ^a	R. M. Lawyer.
Grenola.....	Elk.....	1,116	23	61.8	— 4.1	95	30	40	81	42	4.41	— 0.45	1.57	0.0	14	11	7	13	J. W. Eby.
Howard.....	do.....	1,112	3	—	—	—	—	—	—	—	5.02	—	1.50	0.0	10	17	2	12	E. M. Anderson.
Hugoton.....	Stevens.....	—	6	62.4	—	98	91	31	17	54	1.43	—	0.67	0.0	7	14	10	7	E. S. Webster.
Hutchinson.....	Reno.....	1,535	20	61.2	— 4.1	93	10	37	8	39	3.74	+ 0.08	1.58	0.0	8	15	1	15	F. L. Kenoyer.
Independence.....	Montgomery.....	816	37	63.0	— 4.5	89	10	38	8	37	6.25	+ 1.44	1.49	0.0	15	7	5	19	U. S. Weather Bureau.
Iola.....	Allen.....	994	4	60.6	— 3.9	86	10	40	13	34	8.59	+ 3.54	2.55	0.0	18	13	5	13	James Aiken.
Jetmore.....	Hodgeman.....	2,298	9	59.4	—	93	31	35	8	45	1.80	—	0.52	0.0	7	5	17	9	B. B. Anawalt.
Kingman.....	Kingman.....	1,504	2	63.31	—	93	30	391	18	371	3.64	—	0.99	0.0	10	7	14	10	Rodney Torrey.
La Crosse.....	Rush.....	2,061	8	59.2 ^b	—	91 ^b	31	36 ^b	81	41 ^b	5.32	—	2.55	0.0	10	10	8	13	C. H. Longstreth.
Lakin.....	Kearney.....	2,993	20	60.1	— 2.7	95	31	30	17	49	1.29	— 0.59	0.70	0.0	4	18	6	7	H. H. Wolcott.
Larned.....	Pawnee.....	2,090	25	59.5	—	92	101	36	31	42	2.73	— 0.40	0.72	0.0	8	14	4	13	J. J. Bowman.
Lebo.....	Coffey.....	1,138	24	60.4	— 4.5	86	10	40	8	32	8.62	+ 2.99	2.00	0.0	14	9	11	11	F. W. Schmitt.
Le Roy.....	do.....	990	1	—	—	—	—	—	—	—	8.51	—	2.54	0.0	16	11	1	19	Dr. R. T. Nichols.
Liberal.....	Seward.....	2,843	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Mrs. Nella Poling.
Mc Pherson.....	Mc Pherson.....	1,495	21	59.4	— 4.7	91	10	38	8	36	4.56	— 0.45	1.20	0.0	12	11	5	15	Ed. F. Haberlein.
Mackaville.....	Stafford.....	2,032	21	59.3	— 3.8	95	30	35	8	40	1.49	— 1.67	0.26	0.0	8	8	9	14	C. A. David.
Madison.....	Greenwood.....	1,074	9	60.0	—	89	10	37	13	42	6.81	+ 0.76	1.27	0.0	14	8	16	7	D. D. McIntosh.
Marion.....	Marion.....	1,310	17	60.4	— 5.6	91	10	37	8	36	6.01	+ 0.88	1.05	0.0	16	6	13	12	S. P. Garrison.
Medicine Lodge.....	Barber.....	1,475	17	62.0	— 4.2	98	30	36	8	40	3.83	— 0.59	1.69	0.0	10	9	11	11	M. L. Riechenbrode.
Medora.....	Reno.....	1,484	1	—	—	—	—	—	—	—	4.56	—	1.30	0.0	11	8	9	14	H. N. Renfrew.
Mount Hope.....	Sedgwick.....	1,410	13	—	—	—	—	—	—	—	3.24	— 0.72	0.92	0.0	10	8	11	12	Susan P. Whipple.
Neosho Rapids.....	Lyon.....	1,092	5	—	—	—	—	—	—	—	7.88	—	1.58	0.0	14	12	3	16	J. K. Barnd.
New City.....	New.....	2,260	17	—	—	—	—	—	—	—	5.02	+ 2.46	1.25	0.0	13	—	—	—	C. F. Walden.
Newton.....	Harvey.....	1,454	13	61.8	— 3.7	92	10	40	17	40	6.16	+ 0.81	1.93	0.0	10	10	10	11	N. I. Farris.

TABLE 1.—Climatological data for May, 1910. District No. 7—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, 0.1 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Oklahoma—Cont'd.																				
Fort Gibson.	Muskogee.	556	6							7.00		2.90	0.0	13	12	3	16	e.	John T. Welch.	
Frederick.	Tillman.	1,293	7	68.6		98	10	42	8	43	2.47	0.88	0.0	8	11	10	10	s.	B. B. Bradley.	
Gage.	Ellis.	2,136	8	61.6		97	10	37	8	47	0.70	0.42	0.0	4	18	6	7	s.	C. H. Holmes.	
Goodwell.	Texas.	3,300	1	62.7		95	30	37	17	55	0.80	0.32	T.	6	17	5	9	sw.	S. W. Black.	
Guthrie.	Logan.	1,000	8																G. W. Derrick.	
Guymon.	Texas.	3,133	1																A. L. Mordt.	
Harrington.	Roger Mills.	2,200	7	63.6		94	10	41	8	40	2.31	0.77	0.0	6	15	6	10	sw.	T. Compton.	
Hartshorne.	Pittsburg.	700	12	68.1	- 2.7	90	31	45	8	36	6.85	+ 0.32	2.00	0.0	10	12	6	13	s.	Edward Glendenning.
Heldtton.	Carter.	900	17	66.5	- 3.4	93	10	41	9	43	4.86	- 2.21	1.69	0.0	9	15	10	6	n.	C. H. Heald.
Helena.	Alfalfa.	1,396	3	64.8		96	10	40	9	51	3.10	2.15	2.15	0.0	10	16	5	10	s.	Frank Horsfall.
Hennessy.	Kingfisher.	1,166	16	67.2	- 0.6	97	10	40	8	38	4.30	- 0.96	2.12	0.0	8	3	23	5	s.	W. W. Parka.
Hobart.	Kiowa.	1,396	7	69.6		99	10	43	8	44	3.76	1.33	1.33	0.0	9	6	17	8	s.	Roy Benedict.
Holdenville.	Hughes.	1,900	10	65.2	- 2.1	99	10	43	8	34	5.64	- 1.07	0.90	0.0	11	14	9	8	s.	Miss M. Rutherford.
Hooker.	Texas.	2,999	5	61.8		100	30	36	17	47	0.99	0.29	0.0	6	6	4	21	n.	H. N. Kelley.	
Hurley.	Cimarron.	3,600	2	60.8		93	9	34	2	46	4.60	2.00	2.00	0.0	5	13	8	10	n.	C. W. Meyers.
Idabel.	McCurtain.	4,474	3	64.7		95	31	39	15	44	3.17	3.01	3.01	0.0	5	19	2	10		M. L. Henderson.
Jefferson.	Grant.	1,062	17	64.5	- 2.9	96	1	39	8	45	2.55	- 5.42	0.65	0.0	10	11	12	8	s.	T. E. Beck.
Kenton.	Cimarron.	4,000	11	61.4	- 0.3	92	31	34	22	48	1.50	- 1.09	0.50	0.0	7	15	8	8	e.	L. A. Wikoff.
Kingfisher.	Pittsburg.	1,046	13	67.2	- 0.6	96	10	41	8	43	3.81	- 2.68	1.45	0.0	10	10	11	10	s.	J. C. Cross.
McAlester.	Kingfisher.	698	18	67.8		91	29	45	8	35	6.13	- 0.48	1.75	0.0	10	12	2	17	ne.	Wm. Noble.
McComb.	Pottawatomie.	1,200	16	67.3	- 1.0	92	10	44	8	38	3.83	- 2.50	2.35	0.0	6	10	14	7	s.	Jas. E. McNair.
Mangum.	Greer.	1,585	18	66.4	- 3.7	97	1	41	8	48	2.77	- 2.44	1.40	0.0	8	9	12	10	se.	M. J. Northcutt.
Marlow.	Stephens.	1,292	10	67.0	- 0.7	95	10	48	4	36	3.78	- 3.09	1.74	0.0	9	14	2	15	se.	W. B. Anthony.
Meeker.	Lincoln.	1,030	17	66.7	- 1.6	93	11	43	7	31	2.36	- 3.91	0.75	0.0	6	15	6	10	s.	Dr. J. B. Baugh.
Muskogee.	Muskogee.	614	12	66.0	- 1.6	90	31	42	8	40	6.26	+ 0.13	3.85	0.0	5	11	11	9	s.	Prof. E. N. Collette.
Mutual.	Woodward.	1,500	5	66.4		100	10	35	3	50	1.68	0.98	0.98	0.0	4	14	3	14	s.	Thos. Martin.
Neola.	Caddo.	1,149	14	65.7	- 1.3	96	31	39	8	42	3.32	- 2.85	0.93	0.0	9	13	9	9	s.	R. N. Schooling.
Newkirk.	Kay.	1,171	17	66.5		94	10	44	8	42	4.17	2.38	2.38	0.0	10	9	13	10	s.	P. H. Albright & Co.
Norman.	Cleveland.	1,854	7	64.0		94	10	39	8	41	4.21	1.74	1.74	0.0	7	14	7	10	s.	Walter H. Meier.
Oakwood.	Dewey.	1,194	7	65.3		96	1	43	23	44	2.68	0.89	0.89	0.0	11	14	9	8	s.	Dr. F. P. Osborn.
Okeene.	Blaine.	1,247	21	64.9	- 3.2	92	10	45	8	34	2.72	- 3.03	1.28	0.0	12	7	15	9	s.	Dr. L. H. Murdoch.
Oklahoma.	Oklahoma.	732	8	64.8		89	10	42	8	41	5.57	3.55	3.55	0.0	6	12	5	13	s.	U. S. Weather Bureau
Okmulgee.	Okmulgee.	880	11			91	10	39	8	34	4.64	- 2.12	1.29	0.0	10	10	11	11	s.	J. L. Maynard.
Pauls Valley.	Garvin.	918	12	64.4	- 3.4	95	10	38	8	38	3.84	- 2.72	1.43	0.0	12	12	7	12	s.	A. M. Foss.
Pawhuska.	Osage.	1,060	13	65.6	- 1.3	93	10	45	8	45	4.12	- 3.71	1.81	0.0	10	15	3	13	s.	R. C. Block.
Perry.	Noble.	796	9	66.4		91	31	43	8	35	2.71	- 3.71	1.81	0.0	10	15	3	13	s.	J. A. Douglas.
Ravin.	Johnson.	900	18	66.5	- 1.1	91	31	43	8	35	2.71	- 3.71	1.81	0.0	10	15	3	13	s.	R. G. Gaylor.
Sac & Fox Agency.	Lincoln.	1,041	10	64.2	- 2.9	91	10	41	8	45	3.25	- 3.16	1.21	0.0	12	14	1	15	s.	D. B. Taylor.
Shawnee.	Pottawatomie.	1,356	4	68.2		97	10	42	8	42	4.82	- 1.54	2.75	0.0	7	13	14	4	e.	Neal R. Clark.
Snyder.	Kiowa.	880	18	65.0	- 2.5	94	10	41	8	41	4.48	- 1.54	1.78	0.0	13	12	7	12	s.	Dr. W. G. Woodard.
Stillwater.	Payne.	700	22	65.5		98	11	36	8	44	0.91	- 0.81	1.12	0.0	12	4	21	6	s.	J. M. Speidel.
Supply.	Woodward.	2,100	3	63.3		93	30	45	9	41	5.21	- 0.81	1.12	0.0	9	10	5	15	n.s.	A. H. Trumbo.
Tulsa (1).	Tulsa.	698	7	66.1		87	10	39	8	36	5.10	- 2.00	3.23	0.0	12	13	2	16	s.	William Hall.
Vinita.	Craig.	588	14	64.6	- 4.5	89	10	40	8	37	8.14	+ 1.73	1.01	0.0	10	12	9	10	se.	C. E. Lahman.
Wagoner.	Wagoner.	1,258	14	65.8	- 1.6	96	10	45	8	48	3.25	- 2.07	1.01	0.0	10	18	3	10	s.	S. L. Hatfield.
Waukomis.	Garfield.	988	14	69.2		98	10	45	8	43	2.82	0.93	0.93	0.0	11	16	8	7	s.	R. C. Shades.
Waurika.	Jefferson.	1,639	9	64.8		96	1	41	31	45	3.28	0.92	0.92	0.0	11	16	8	7	s.	M. A. Swindler.
Weatherford.	Custer.	479	12	66.0	- 2.4	91	30	36	25	40	6.17	+ 1.73	3.00	0.0	9	9	13	9	e.	B. D. Reed.
Webbers Falls.	Muskogee.	945	5	66.4		95	10	41	8	40	6.17	5.00	5.00	0.0	8	17	5	9	s.	J. M. Dankwardt.
Whiteagle.	Kay.											0.25	0.0	6	19	5	7	s.	R. A. Boyle.	
Woodward.	Woodward.	1,886	1	63.2		98	30	38	8	44	0.53									
Missouri.																				
Belle.	Maries.	18	59.8	- 5.3	84	10	36	14	35	4.97	- 0.57	0.90	0.0	12	5	19	6	n.s.	A. J. Wofford.	
Birchtree.	Shannon.	1,200	17	61.3	- 3.9	86	11	40	14	38	4.08	- 0.52	1.15	0.0	8	12	9	10	e.s.	V. H. Kirkendall.
Cape Girardeau.	Cape Girardeau.	346	5								2.20	0.90	0.90	0.0	5	10	11	10	s.	D. L. Albert.
Caruthersville.	Pemiscot.	20	65.6	- 3.1	91	29	40	14	39	2.03	- 2.42	0.50	0.0	12	16	2	13	nw.	H. E. Averill.	
Dean.	McDonald.	11	62.4	- 4.0	87	10	35	13	44	7.77	+ 1.12	1.60	0.0	14	15	5	11		H. E. Dean.	
Doniphan.	Ripley.	440	6	63.8		86	29	38	14	39	4.79	2.72	2.72	0.0	10	11	11	9	sw.	W. W. Martin.
Farmington.	St. Francois.	889	3																Miss Carrie Sneed.	
Gano.	Dent.	7	62.2		88	9	36	14	34	5.11	1.50	1.50	1.50	0.0	13	13	9	9	s.	A. C. Leech.
Goodland.	Iron.	900	5	59.6		84	10	33	14	45	5.51	3.30	3.30	0.0	5	15	1	15	s.	F. M. Adams.
Greenville.	Wayne.	16	63.8	- 3.0	89	29	37	14	44	4.12	+ 1.17	1.85	0.0	7	7	23	1	s.	A. G. Templeton.	
Holliester.	Taney.	62.4			91	28	36	13	44	4.15	+ 0.35	3.30	0.0	9	8	10	13	sw.	W. P. Chapman.	
Ironton.	Iron.	925	32	60.0	- 4.7	86	10	32	14	44	5.28	- 1.80	1.07	0.0	8	7	10	14	n.	W. H. Delano.
Jackson.	Cape Girardeau.	458	19	62.6	- 2.7	87	29	36	15	34	2.57	- 1.80	1.07	0.0	8	7	10	14	n.	L. M. Bean.
Joplin.	Jasper.	979	32	64.2		87	10	41	13											

TABLE 1.—Climatological data for May, 1910 District No. 7—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.					Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		Prevailing wind direction.
Arkansas.																				
Albia	Lawrence	6	65.3		88	11	40	14	43	4.90		2.40	0.0	6	25	3	3	ne.	McCullough & Guelck.	
Anity	Clark	250	18	68.2	- 2.1	92	30	42	8	43	7.31	+ 0.74	2.67	0.0	14	8	7	16	sw.	Prof. S. M. Samson.
Arkadelphia (near)	do.	250	3	69.6		94	29	45	9	42	6.43		1.85	0.0	9	16	4	11		J. A. Ross.
Arkansas City	Desha	145	27	66.6		94	29	45	9	42	5.30	+ 1.81	1.74	0.0	11					W. C. Blundell.
Batesville (2)	Independence	271	6								8.90		1.74	0.0	12					Miss Lelia I. Teter.
Bee Branch	Van Buren	18	65.8	- 2.9	89	11	40	13	42	9.75	+ 4.70	2.50	0.0	10	9	10	12		J. E. Scanlon.	
Benton	Saline	283	3	66.5		91	29	43	9	41	7.14		2.00	0.0	8	10	12	9	s.	J. E. Evans.
Bentonville	Benton	1,303	5	62.0	- 4.4	86	30	39	13	38	6.52	+ 1.30	2.33	0.0	14	13	6	12	s.	U. S. Weather Bureau.
Bergman	Boone	1,324	14	59.6	- 6.7	85	10	32	13	49	5.19	- 0.60	2.23	0.0	10	15	9	7	sw.	John T. Maxey.
Black Rock	Lawrence	6									6.61		1.86	0.0	11					S. J. Howe.
Brinkley	Monroe	226	24	65.0	- 4.9	90	29	42	9	45	6.26	+ 1.44	1.53	0.0	7					H. L. D. Whitson.
Calico Rock	Isard	361	6								5.70		1.70	0.0	7					W. H. Stoner.
Camden	Ouachita	158	25	69.0	- 2.7	92	30	43	14	38	5.12	+ 0.51	1.44	0.0	13	11	5	15	s.	R. H. Quarterman.
Centerpoint	Howard	10	69.5			93	30	43	8	43	7.95		3.50	0.0	7	10	8	13	sw.	J. M. Huddleston.
Clarendon	Monroe	171	6								5.48		1.16	0.0	12					Mrs. B. E. Bishop.
Conway	Faulkner	309	27	66.2	- 3.4	89	11	43	9	39	10.39	+ 5.02	2.73	0.0	10	9	15	7	sw.	G. H. Burr.
Corning	Clay	293	18	65.6	- 3.2	88	11	41	14	33	5.04	+ 0.45	1.55	0.0	12	9	14	8	s.	Jacob Brobst.
Dardanelle	Yell	330	24	65.5		91	11	40	8	46	6.99	+ 1.28	2.10	0.0	11					A. Bernard.
Dennard	Van Buren																			Fred B. Brown.
Dodd City	Marion	1,175	29	64.2	- 3.4	90	10	35	13	43										Neal Dodd.
Dutton	Madison	9	63.4			87	29	40	8	45										Edward Mize.
Earl	Crittenden	4	66.6			90	29	43	9	37	4.02		1.83	0.0	6	20	7	4		W. J. Moss.
Eldorado	Union	265	6	68.6		91	30	43	8	34	7.50		1.30	0.0	12					Fred A. Babb.
England	Lonoke	4	67.3			90	29	41	14	38	5.30		2.50	0.0	9	7	9	15	s.	J. C. Chenault.
Eureka Springs	Carroll	9	64.4			90	10	31	7	42	5.18		1.30	0.0	12	12	10	9	sw.	S. H. Britts.
Fayetteville	Washington	1,451	21	63.4	- 3.1	85	10	39	8	43	6.87	+ 0.61	2.80	0.0	14	15	8	8	sw.	University of Arkansas.
Fort Smith	Sebastian	481	28	66.2	- 3.5	89	30	45	8	35	4.82	- 0.09	1.94	0.0	13	10	10	11	c.	U. S. Weather Bureau.
Fulton	Hempstead	264	6								5.24		1.26	0.0	8					B. C. Logan.
Hardy	Sharp	643	12	63.8		87	10	42	14	35	6.75	+ 0.47	2.40	0.0	11	7	11	13	sw.	C. A. Caywood.
Helena (2)	Phillips	182	9	67.1	- 4.2	92	29	42	14	35	5.76	+ 1.11	1.56	0.0	12					B. F. Modisett.
Hot Springs	Garland	600	4	66.0		89	29	39	4	42	10.07		3.72	0.0	11	23	5	3	w.	Hot Springs Water Co.
Huttig	Union	85	3	70.0		91	29	44	14	38	6.23		1.25	0.0	10	10	18	3		C. A. Berry.
Jonesboro	Craighead	345	15	65.7	- 3.4	90	28	40	13	37	4.25	- 0.08	1.30	0.0	9	9	14	8	s.	Benedictine Sisters.
Junction	Union	17	70.3	- 1.5	95	30	40	9	45	7.71	+ 4.07	2.40	0.0	8	15	6	10	sw.	J. A. Lowderback.	
Lake Farm	Jefferson	195	3	66.4	- 1.5	89	30	38	14	38	6.81		1.70	0.0	11	13	9	7	s.	R. H. Gillespie.
Lewisville	Lafayette	262	7	69.4		92	30	45	14	38	6.16		2.00	0.0	12	13	7	11		F. W. Youmans.
Little Rock	Pulaski	357	31	66.8	- 3.6	88	29	47	9	33	7.19	+ 2.09	2.82	0.0	10	8	16	7	e.	U. S. Weather Bureau.
Lutherville	Johnson	775	13	64.7	- 2.8	87	11	41	9	38	7.46		2.13	0.0	10	9	11	11	ne.	Herman Hentschel.
McNeil	Columbia	321	3																	L. A. Smith.
Malvern	Hot Spring	277	23	66.2	- 6.7	92	29	42	15	40	5.16	- 0.47	1.44	0.0	11	5	8	18	ne.	Miss L. C. Smith.
Mammouth Spring	Fulton	6	62.6			88	11	35	14	43	4.09		1.65	0.0	12	5	22	4		F. Wallick.
Marked Tree	Poinsett	6									5.23		1.25	0.0	10					L. Smith.
Mena	Polk	24																		D. H. Hopkins.
Monroe	Newton	1,160	17	61.1	- 4.6	82	30	40	13	28	9.54	+ 1.98	1.92	0.0	8	13	4	14	s.	Theo. Ober.
Mount Nebo	Yell	1,730	20	62.4	- 5.0	84	11	35	15	39	5.93	- 0.41	1.25	0.0	7	19	8	4		T. G. Church.
Newport (1)	Jackson	231	26	65.6	- 4.5	90	29	42	14	37	6.79	+ 2.54	1.90	0.0	11					L. R. Cobb.
Oark	Franklin	377	19	67.6	- 3.4	91	29	43	8	40	6.70	+ 0.41	1.98	0.0	12	17	10	4	e.	R. M. Adams.
Pine Bluff	Jefferson	215	22	67.8	- 4.2	90	28	45	8	36	8.32	+ 3.52	2.40	0.0	11					R. M. Hudson.
Pocahontas	Randolph	18	65.8	- 2.6	89	1	45	8	37	5.16	+ 0.12	2.08	0.0	11	13	10	8		Benedictine Sisters.	
Pond	Benton	1,250	13	62.2	- 3.3	85	10	35	8	39	7.61	+ 1.13	1.77	0.0	13	4	18	9	sw.	A. F. Stevens.
Portland	Ashley	122	1	68.0		90	29	42	14	40	6.36		1.63	0.0	10					T. A. Corson.
Prescott	Nevada	327	22	67.8	- 3.5	92	30	43	8	40	7.00	+ 1.86	2.00	0.0	13					A. M. Ellsworth.
Rogers	Benton	1,385	10	62.3	- 4.0	85	10	39	13	38	6.62	+ 0.40	2.02	0.0	15	9	9	13	s.	Carl A. Stark.
Spilerville	Logan	1,050	13	67.2	- 2.4	90	10	45	9	38	6.72	- 0.36	1.31	0.0	10	15	8	8	sw.	New Subiaco Abbey.
Springbank	Miller	182	3								5.62		1.71	0.0	11					G. Field.
Stuttgart	Arkansas	495	23	66.2	- 4.0	91	30	43	13	35	9.65	+ 4.78	2.83	0.0	12	14	9	8	sw.	H. A. Buerkle.
Texarkana	Miller	332	26	68.8	- 2.7	90	29	49	8	30	6.16	+ 2.22	1.85	0.0	11					F. F. Quinn.
Warren	Bradley	304	15	67.6	- 4.1	91	29	42	14	39	5.46	+ 1.13	1.11	0.0	9					W. J. Savage.
Whitecliffs	Little River	296	6								4.70		1.65	0.0	12					John E. Payton.
Wiggins	Garland	17	66.0	- 3.3		91	30	38	14	43	6.13	- 0.09	2.22	0.0	10	6	19	6	sw.	S. D. Jester.
Wynne	Cross	2	65.8			90	29	41	13	35	7.20		1.68	0.0	12					R. R. Poole.
Mississippi.																				
Anguilla	Sharkey	107	2	69.8		92	29	41	14	38	4.42		1.25	0.0	8	11	4	16	sw.	E. W. Cook.
Austin	Tunica	200	14	66.6	- 4.5	88	29	40	14	37	4.69	+ 0.40	1.15	0.0	11	15	5	11	w.	H. J. Irvine.
Batesville	Panola	230	22	66.6	- 3.7	89	29	40	14	38	7.11	+ 2.99	2.27	0.0	12	15	2	14	e.	J. M. Cox.
Byhalia	Marshall	390	1								4.18		1.12	0.0	10	9	13	9	sw.	Tallahatchie Drng. Com.
Canton	Madison	228	20	69.6	- 2.4	91	30	41	15	42	3.12	- 0.62	1.02	0.0	10	8	14	9	sw.	Dr. G. W. Smith-Vaniz.
Clarksdale	Coahoma	177	3	67.8		90	29	42	14	35	5.25		1.82	0.0	13	10	5	16	sw.	J. F. Durham.
Coffeeville	Yalobusha	241	1																	

TABLE 1.—Climatological data for May, 1910. District No. 7—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Mississippi—Cont'd.																				
Tchula.....	Holmes.....	130	5	69.7	.....	93	29	40	14	42	6.82	.....	1.55	0.0	10	9	13	9	w.	Dr. M. P. Winkler.
University.....	LaFayette.....	502	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. H. Dorroh.
Utica.....	Hinds.....	287	6	70.0	.....	91	29	45	14	34	5.45	.....	1.60	0.0	10	6	19	6	s.	Dr. J. B. Dudley.
Vicksburg.....	Warren.....	247	39	72.8	- 0.1	89	29	52	14	24	2.99	- 1.27	1.45	0.0	7	7	8	16	so.	U. S. Weather Bureau.
Water Valley.....	Yalobusha.....	300	21	67.2	- 3.5	90	30	41	14	37	5.22	+ 0.65	1.00	0.0	11	15	7	9	so.	Miss Loula Erikaon.
Woodville.....	Wilkinson.....	560	17	71.6	- 2.6	89	30	51	13	28	5.88	+ 1.37	1.18	0.0	10	18	10	3	sw.	James E. Lee.
Yazoo City.....	Yazoo.....	116	16	69.6	- 4.3	93	29†	45	14	36	4.27	+ 0.68	0.90	0.0	8	16	6	9	sw.	H. S. Orr.
Louisiana.																				
Abbeville.....	Vermilion.....	18	22	75.0	+ 0.4	92	31	56	13†	30	8.54	+ 4.56	2.67	0.0	8	16	14	1	so.	Hon. C. J. Edwards.
Alexandria.....	Rapides.....	77	19	72.0	- 1.6	94	30	49	9	38	9.43	+ 4.92	4.43	0.0	8	10	6	15	s.	Miss Nellie Graham.
Amite.....	Tangipahoa.....	130	22	72.2	- 1.6	94	30	49	13	34	7.32	+ 2.73	2.65	0.0	8	9	18	4	s.	Miss Lula M. Wents.
Baton Rouge.....	E. Baton Rouge.....	35	22	74.9	+ 0.7	89	30	59	9	23	4.13	+ 0.43	1.35	0.0	7	14	1	16	c.	Elmo M. Bott.
Burnside.....	Ascension.....	20	10	73.0	- 0.6	92	30	52	15	32	3.61	- 1.90	2.10	0.0	6	15	5	11	w.	C. S. McFarland.
Burrwood.....	Plaquemines.....	1	20	72.5	- 2.4	84	30	62	8	16	3.41	+ 0.59	1.64	0.0	4	17	4	10	se.	Graham Myers.
Calhoun.....	Ouachita.....	180	17	69.9	- 2.0	93	29†	41	14	45	5.82	+ 1.60	1.55	0.0	8	11	10	10	s.	N. L. Exp. Station.
Cameron.....	Cameron.....	6	15	73.2	- 2.0	84	13†	59	13†	25	5.15	+ 1.54	3.35	0.0	4	10	16	5	se.	State Biologic Station.
Cheneyville.....	Rapides.....	67	20	72.8	- 0.8	92	30	50	15	34	6.21	+ 1.90	2.12	0.0	9	9	8	14	c.	Walter I. Tanner.
Clinton.....	East Feliciana.....	113	20	71.9	- 1.8	89	30	51	13	30	4.75	+ 0.76	1.76	0.0	5	8	8	15	n.	John A. White, Jr.
Collinston.....	Morehouse.....	65	8	70.1	.....	92	29	44	14	40	5.42	.....	1.82	0.0	9	13	9	9	.....	W. A. Page.
Covington.....	St. Tammany.....	39	17	73.4	- 0.9	93	30†	52	13	33	4.05	- 0.09	0.85	0.0	8	10	4	17	s.	C. Champagne.
Dodson.....	Winn.....	3	1	70.5	.....	91	30	47	9	36	7.40	.....	1.97	0.0	8	12	11	8	.....	J. P. Lucas.
Donaldsonville.....	Ascension.....	33	20	76.0	+ 1.4	92	19†	58	25	28	3.03	- 1.23	0.95	0.0	6	16	4	11	c.	John F. Park.
Farmerville.....	Union.....	177	20	67.2*	- 4.9	87*	9†	42†	13	38*	6.25	+ 1.56	1.55	0.0	8	12	5	14	s.	W. P. Chandler.
Ferriday.....	Concordia.....	10	3	70.6*	.....	91*	30	36*	10	50*	8.58	.....	3.00	0.0	8	22	1	8	s.	R. Z. Sclater.
Franklin.....	St. Mary.....	18	74.8	- 1.0	.....	91	12	57	15	31	4.88	+ 0.56	1.66	0.0	9	14	5	12	s.	Miss Josephine M. Bonney
Grand Cane.....	De Soto.....	302	4	70.8	.....	91	29	47	9	40	8.07	.....	2.07	0.0	7	10	2	19	s.	J. J. Paxton.
Grand Coteau.....	St. Landry.....	93	23	73.8	- 0.6	91	30	54	13	30	6.80	+ 2.20	1.30	0.0	10	14	15	2	sw.	St. Charles College.
Hammond.....	Tangipahoa.....	44	15	73.0	- 1.1	94	30	50	13	35	4.27	+ 1.21	1.60	0.0	8	17	7	7	so.	C. C. Carr.
Houma.....	Terrebonne.....	19	73.7	- 1.6	.....	92	30†	50	11	36	3.25	- 0.29	1.90	0.0	5	11	6	20	a.	J. M. Hagerty.
Jennings.....	Calcasieu.....	30	12	73.4	- 0.6	90	31	53	15	31	9.00	+ 3.82	2.70	0.0	8	5	22	4	so.	J. F. Buch.
Lafayette.....	Lafayette.....	36	21	73.2	- 1.2	89	31	56	13	27	7.05	+ 2.98	1.90	0.0	10	15	5	11	c.	J. J. Davidson.
Lake Charles.....	Calcasieu.....	22	22	73.0	- 1.0	93	31	52	25	37	4.56	+ 0.41	1.11	0.0	6	23	1	7	s.	A. O. Boudreaux.
Lakeside.....	Cameron.....	9	74.8	.....	.....	94	31	59	10	31	7.46	.....	2.75	0.0	6	25	0	6	sw.	Miss L. T. Nunnemacher.
Lawrence.....	Plaquemines.....	6	18	75.0	- 0.8	98	30	59	9†	32	2.64	- 0.63	0.95	0.0	5	19	8	4	so.	H. C. Warmoth.
Liberty Hill.....	Bienville.....	23	74.6	+ 1.6	.....	95	10†	44	9	46	8.11	+ 4.22	2.71	0.0	7	12	7	12	s.	Dr. E. A. Crawford.
Logansport.....	De Soto.....	192	6	.....	.....	.....	.....	.....	.....	.....	9.57	.....	3.55	0.0	8	13	3	15	s.	Mrs. Bettie M. Dennis.
Melville.....	St. Landry.....	45	21	72.0	- 2.3	92	30	50	13†	36	4.99	+ 0.71	1.14	0.0	9	12	4	15	so.	Chas. B. McNeill.
Minden.....	Webster.....	194	18	68.7	- 4.0	92	10†	43	9†	48	6.58	+ 2.66	2.70	0.0	12	11	6	14	a.	Miss Ethel Fort.
Monroe.....	Ouachita.....	82	22	70.9	- 2.7	91	1†	49	14	33	5.96	+ 2.27	2.40	0.0	10	19	1	11	n.	Kenneth F. Stiles.
Morgan City.....	St. Mary.....	14	5	.....	.....	.....	.....	.....	.....	.....	4.18	.....	1.19	0.0	6	14	12	5	c.	Virgil E. Kinsey.
Newellton.....	Tensas.....	3	70.6	.....	.....	92	30	45	14	35	6.04	.....	3.53	0.0	6	12	16	3	s.	John D. Fultz.
New Iberia.....	Iberia.....	15	20	74.2	- 0.4	89	30†	59	9†	22	5.29	+ 1.67	1.65	0.0	8	11	17	3	sw.	Mrs. Jno. A. Gebert.
New Orleans (1).....	Orleans.....	51	40	73.9	- 0.6	90	30	60	8	22	4.65	+ 0.77	1.56	0.0	8	16	11	4	so.	U. S. Weather Bureau.
New Orleans (2).....	do.....	18	21	74.5	- 0.4	93	30	54	13	32	3.74	- 0.39	1.06	0.0	8	7	11	13	s.	Sugar Exp. Station.
Opelousas.....	St. Landry.....	83	18	74.1	- 0.4	92	2†	52	13	32	6.55	+ 1.42	1.71	0.0	8	16	3	12	se.	Andrew Moresi.
Plain Dealing.....	Bossier.....	268	18	69.8	- 2.0	93	30	43	14	42	5.84	+ 0.70	1.29	0.0	10	10	6	15	so.	Leon Sanders.
Rayne.....	Acadia.....	44	18	73.9	- 1.2	91	30	55	13†	30	4.77	+ 0.42	1.27	0.0	8	13	0	18	c.	A. P. McNeil.
Reserve.....	St. John Baptist.....	8	74.2	.....	.....	97	30	50	1	39	3.80	.....	1.56	0.0	6	6	19	6	.....	Leon Godechaux Co., Ltd.
Robeline.....	Natchitoches.....	147	13	70.6	- 1.2	91	29	45	9†	43	13.00	+ 9.56	5.75	0.0	6	10	10	11	.....	Miss Ruby McCook.
Ruston.....	Lincoln.....	312	13	70.8*	- 1.2	93*	30	44*	14†	36*	5.70	+ 1.86	1.80	0.0	7	13	12	6	sw.	J. C. H. McKinney.
St. Francisville.....	West Feliciana.....	115	6	72.9	.....	92	30	53	13	29	3.10	.....	0.90	0.0	5	18	4	9	c.	L. P. Kilbourne.
Schriever.....	Terrebonne.....	17	17	73.9	- 1.1	94	30	50	16	43	4.51	+ 0.43	1.04	0.0	8	14	6	11	so.	Chas. V. Moore.
Shreveport.....	Caddo.....	249	39	70.8	- 2.4	90	30	52	8	30	6.62	+ 2.46	2.95	0.0	9	11	9	11	so.	U. S. Weather Bureau.
Simmesport.....	Avoyelles.....	5	.....	.....	.....	.....	.....	.....	.....	.....	5.50	.....	2.53	0.0	9	9	1	21	so.	C. T. Leigh.
Southern Univ. Farm.....	Jefferson.....	15	.....	.....	.....	.....	.....	.....	.....	.....	5.05	+ 0.04	1.70	0.0	7	20	6	5	so.	F. L. St. Martin.
Sugartown.....	Calcasieu.....	17	72.9	- 1.2	.....	90	30	47	12	40	4.54	+ 0.05	2.64	0.0	4	2	25	4	.....	G. W. Richardson.
Tallulah.....	Madison.....	91	2	71.5†	.....	94†	28	51†	25†	32†	5.32	.....	2.27	0.0	7	5	23	3	.....	C. E. Speed.

* , b , c , etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

† Precipitation included in that of the next measurement.

** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.

† Also on other dates.

‡ Separate dates of falls not recorded.

§ Data are from standard instruments not supplied by the U. S. Weather Bureau.

|| Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

¶ Estimated by observer.

‖ Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2—Daily precipitation for May, 1910. District No. 7, Lower Mississippi Valley.

[illegible]

MAY, 1910.

MONTHLY WEATHER REVIEW.

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TABLE 2.—Daily precipitation for May, 1910. District No. 7—Continued.

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Texas—Cont'd.																																	
Piemons	Canadian				.01	.01								.10	T.	.30			T.	.08			.07	T.					.62		T.		1.10
Quanah	Red				.05	T.								T.	1.70	T.				.31			.90	.99									3.95
Ringo Crossing	do			1.05	.62													1.52		.38			.92										4.46
Romero	Canadian			T.	.01									.03	.03	.36	T.			.05			.10	T.									0.69
Sherman	Red				.05	.49		.20						.11				.17		.33	T.	.31	.16	.40	.96								3.18
Sulphur Springs	do				.07									.17				.22		.34			.24	.06									1.10
Tealine	Canadian				T.									.30	T.			.15					.85	T.	T.				.45				1.75
Tulia	Red			.36	.17	.06								.85	.35	.06				.34			.05	T.	.21	T.	T.	.20				T.	2.65
Wichita Falls	do																																
Winfield	do			.25	T.										T.	T.	1.17			.40	.20	T.	.28		.20								2.50
Kansas.																																	
Anthony	Arkansas				T.	.11	.31							T.	.05	.19	.08			.55	1.44		.75			T.		.49		.32	T.		4.29
Ashland	Cimarron				.02	.32	T.							.18	.15	.01	.33			.10								.68	.02		.08	T.	2.06
Burlington	Neosho	.13	.77					1.35	1.76									.22	.77	.15	.14	.19	.12					.38	1.08		.11	.40	7.72
Chanute	do	T.	1.60	T.			.55	1.03	.95							.61	1.41			.31	T.	.82	.35					.65	1.32	.16	.31	.67	10.74
Cimarron	Cimarron			.66		T.	.30	T.						.15	.27	.03	.35	T.	T.		T.	T.	.05					.22					1.47
Coldwater	do						.28	T.						T.	.22	.02	.25			T.	T.							.13				.13	T.
Columbus	Neosho	.01	.06	T.			.30	1.60	.33						*	.80	1.45	.04		.41	*	.28	.11			.01		.13					6.77
Coolidge	Arkansas	.37														.52							1.30			.02	.02	.12	.64			.60	2.24
Cottonwood Falls	Neosho		.80		T.	1.33	1.52							T.	.50					.19	.08						.50	.02		.61	T.		5.05
Council Grove	do		.55			1.75									.95	.25						.05			1.00			.10		1.10	.30		6.15
Cunningham	Arkansas		.45		T.	.65	.03	T.				T.		.10	.05	T.	.45			T.	.03	T.	1.40				T.			.35			3.51
Dodge City	do	.16	T.		T.	.05	.04	.01	T.					.19	.33	.02	.27			T.		T.	.07				T.		.03				1.17
El Dorado	do		2.00			.68	.85								.19	.73					.37	.10					.58	.53	.02	.31	T.		6.36
Ellinwood	do		.18		.02	1.15	.72	.02			T.			.16	.24	.06	.20			T.	.07	T.		.11			T.	T.		.16			2.03
Emporia	Neosho	T.	2.26			1.19	1.00	.74							1.05	.70				.09			.44	.75				.31	.11	.55	.43		9.62
Eureka	Verdigris	T.	.89	T.	.01	.93	.53	.10			T.					1.31	.72	.03		.33		.55					.13	.24	.13		*	.19	5.91
Fall River	do	.15	.75	.55	.05	.85	1.75	.40								3.02	.60	.05		.25	.02	.35					.20	.25	.30				8.84
Fargo	Cimarron					T.	.05	T.						.07	.26	.11	T.			.13		.22					.13						0.91
Fredonia	Verdigris	T.	.42		.06	.36	1.28	.45							T.	.35	1.46	.03		.30		.27	.08				.16	.16	.52	.05	.13	.30	6.38
Garden City	Arkansas					T.	.05	T.							.45	T.	.05	T.	.10			.60	.70		T.		.07	.06	.29				2.28
Great Bend	do		.08		.07	.20	.88	.02							.06	.27	.04	.18	.04												1.44		3.36
Greensburg	do					T.	.52	T.							T.	.20	.02	.35															1.58
Grenola	Verdigris		.06		.04	.48	1.57	T.			T.				.69	.39	1.00											.49					4.41
Howard	do	T.	.30		T.	.70	1.50	.28							.58	.98										.16	.12						5.62
Hugoton	Cimarron		T.		T.	T.					T.			.12	.04		.02			.06	T.	.24						.28			.67		1.43
Hutchinson	Arkansas		.71			.65	.30								.17	1.21	.58			.15										.06			3.74
Independence	Verdigris	.01	T.		.05	.37	.85	.29							T.	.42	.87	.08		.33		.06	.12				.27	1.49		.03	1.01		8.59
Iola	Neosho	.55	1.27		.01	.71	.52	.15			T.				.04	.31	.48			.15	.48	.03	.03				.39	.86	.02	.06	.53	T.	1.80
Jetmore	Arkansas		.21			.20	.30							.04	.52		.28			T.	T.		.25										1.80
Kingman	do		.42			.99	.12								.15	.16	.20			.13	.14	T.	.57							.76	T.		3.64
La Crosse	do		.52	T.	T.	.22	.55			.04					.09	.60	.03					.13						.04					5.32
Lakin	do		T.		T.										.48				.04		T.		.70										1.29
Larned	do		.37	T.	T.	.17	.64	T.	T.					.25	.30	.03	.25				T.	T.						T.	T.	.72			2.73
Lebo	Neosho		2.00			.88	1.35	.90							.55	.75	.10			.15		.26	.14					.58	.46		.23	.27	8.62
Le Roy	do	.24	.94	.02			.01	.04	.54						T.	.20	.22	.62			.10	.22	T.	T.				.35	.50	1.27	.02	.22	8.51
Liberal	Cimarron															.23	.12			.16			.69				.20	.21		.23	.08		4.56
McPherson	Arkansas		1.20		.06	.32	1.06							.13	.26	.25	.19	T.					T.					.33	.20		.30	.48	1.49
Mackaville	do		.11	T.		.24	.23	T.							T.	.45	1.10	.07		.13		.20	.01					.33	.20		.30	.48	6.81
Madison	Verdigris		1.37		T.	.72	1.20	.35							.03	.50	.31	.07		.11		.02	.17				.01	.37	.32		.75		6.01
Marion	Neosho		.45	.87	.01	.02	1.02	1.05	T.						.04	.32		.27		.10	.18	1.51											3.83
Medicine Lodge	Arkansas				.04		.70	.02							.08		.67					.14	.02	.63		.05							4.56
Medora	do		1.30	T.		.92	.40								.08		.67					.12	.12										3.24
Mt. Hope	do		.61			.92	.40								.08		.67					.12	.12										3.24
Neosho Rapids	Neosho		1.22			1.81	1.41	1.58							.82	.40	.33			.10		.30	.25					.46	.16	.12	.30		7.88
Ness City	Arkansas	.80			.05	1.25	1.09							.28	.76	.09	.20					.24						.04	.05	.04			5.02
Newton	do		.34			.80	.88								.15	.03	1.93			.13		.90					.16	.84					

TABLE 2.—Daily precipitation for May, 1910. District No. 7—Continued.

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oklahoma—Cont'd.																																	
Hurley	Canadian												T. 2.00	.50								1.50	.20		T.		.40					4.60	
Idabel	Red														3.01				.08		.02		.02							.04		3.17	
Jefferson	Arkansas			.15	.37	.34									.34	.10	.04		.18			.38	.50	T.	T.	.03		.65		.18	.20	2.55	
Kenton	Cimarron													.05					.09													1.50	
Kingfisher	do		T.	.30	T.							T. T.	T.		.21	.45	.02		.16	.08		.29	.03				1.26		.07	T.		3.81	
McAlester	Canadian			.42		.44									T. .74	.61			.23	.43	1.75		1.22				.03			.26		6.13	
McComb	do			.40											.35	.35	.17		.30				T. .36								T.	3.83	
Mangum	Red			.23	.36	T.									.17				.09				.28	.40	.20			T. .64				2.77	
Marlow	Washita			T. .77											.13	.23	.04	.18			.12		.15	.42				T. 1.74				3.78	
Meeker	Canadian			.75											.29	.02				.50			.15				.65	T.				2.36	
Muskogee	Arkansas			.43		T. .72									.35	.85	T.						.31	T.				.95			T.	6.26	
Mutual	Canadian				.25										.25	.20												.98				1.68	
Neola	Washita														.86				T.				.67	.21				.10				2.78	
Newkirk	Arkansas			T. .93	.55	.12									.18	.16			.35										.19		.58	.26	3.32
Norman	Canadian			.40											.30	.38	.14		.01			.40	.09	.18				.25	.12			4.17	
Oakwood	do			.46	.08										.43	1.74						1.05						.30			.13		4.21
Okeene	Cimarron			.28	.14	.02						T. T.	T.		.09	.89	.01			.09			.39	.02				.42		.29	T.	.04	2.68
Oklahoma	Canadian			T. .52											.17	.20	.13			.18	.07			.07	.16			.26	.13		T.		2.72
Okmulgee	do			T. T.	.92										.35	.25				.23		.08						.54				5.57	
Pauls Valley	do																																
Pawhuska	Arkansas				.15	.39	T.								T. .86	.27				.37		.43	.18					1.29		.05	.07	.54	4.64
Perry	do			.14	.19	.14									.02	.98	.07			.12		.46	.01					1.43		.06		.22	3.84
Ravina	Washita			.50	.09	.13									.02	1.05		.01		.21			1.30	.78								4.12	
Sac & Fox Agency	Canadian			.15											T. .89	1.21	.06				.01	.23	.10	.03	.07	.23			.75		T.		2.71
Shawnee	do			T. .70	T.										.06	.08	T.						.93	.08					.22	.75			3.25
Snyder	Red			.00	.09	.04	T.								.17	.78	.20	.09			.10	.03	.53	.43					.13	.85		.18	4.48
Stillwater	Cimarron			.00	.27	.11									.02	.28	.05				.12											.06	0.91
Supply	Canadian				.03	.01	T.	.50							.28	.05	.20	T.			.03	.35	.60	.05				.02	1.12	.12		.11	5.21
Tulsa (1)	Arkansas			.03	.01	T.	.50								.95	1.45			.30														5.10
Vinita	do			T. .30	.20	.20									T. 3.23	.02				.32	T.	.10	.19	T.				1.83	.22		.02	.08	8.14
Wagoner	do			.03	.01	.89									.09	1.01	T.			.30	.15		.25	.05				1.00					3.25
Waukomis	Cimarron			.18	.14	.08									T. .22	.02	.55		.02		.19		.93	.23					.10				2.52
Waurika	Red			.10											.12	.92	.03						.79	.40					.14	.22		.17	3.28
Weatherford	Canadian			.09	.37			1.40								.30	.70				1.80	.30	.30	.20									8.14
Webbers Falls	Arkansas			.20		.13	.11	1.40								.08				.25													6.17
Whiteagle	do			.05		.03									T. T.	.25	.06	.09				.05	T.										0.53
Woodward	Canadian			.05		.03									T. T.	.25	.06	.09				.05	T.										0.53
Missouri.																																	
Belle	Meramec		.73	.55	.18		T. .80	.90				.13			.15	.20	.66						.33					T. .25			T. T.	4.97	
Birchtree	Black			.43			.36	.60							.20	.13							1.15	.91							.10	4.08	
Cape Girardeau	Mississippi			T. .06			.37	T.				.15			.12	.12	.00				.15	.25	.10	.50	.02	.10						2.20	
Caruthersville	do			.06			.37	T.				.15			.12	.12	.00				.15	.25	.10	.50	.02	.10						2.03	
Dean	Neosho			.07	.08	.09	.06								1.19	1.60	.06				.32		.08	.62			.07		1.00		.21	.42	7.77
Doniphan	Black			.30	.31		.15								.12	.36	.06						.03	.72	.37	.43							4.79
Farmington	Mississippi																																
Gano	Meramec		.83	.25		T. 1.56					.07				.36	.37	.07						.95	.54			.63	.08			.02		5.11
Goodland	Black						1.65								.38						.09			.30				.09					5.51
Greenville	Mississippi			T. .00		.30	.10				.40	T.			T. T.	.12							.85	.85	.50						T. T.	4.12	
Hollister	White					.40	.80								.90	.80	.20						.40	.15				.20	.30			4.15	
Ironton	Mississippi		.10		.26	.25	T. T.				.10	.13			.10	T. .02					.02	T. T.	.30	T.							T. T.	5.28	
Jackson	do		.66		.57						.23	.24			.03							.04			1.07	.33							2.57
Joplin	Neosho		.05	.02		.25	.88	.20							1.20	1.60							.25	T.				1.00		.41		7.19	
Koshkonong	Black			.02	T.		.15	.24	.01						.28	.60	.04						.05	1.13	.25	.20		.10			.10	3.17	
Lamar	Neosho		.64	T. .06	T. 1.00	.94									.37	.64	.65					.20	.30	.03	.79			.46	.62	.03	.11	.06	7.99
Marble Hill	Mississippi					.46	.31				.12												1.00	1.00	.29								3.12
Mountingrove	White		.61	T. T.		.59	.64								.18	.53	T.						.42	.39							.07	3.51	
Mount Vernon	Neosho																																
Neosho	do			T. .26	.75	.64									.84	.81	.09				.19	.05		.03				1.66			.18		6.50
New Madrid	Mississippi			.10			.22					.56			.10							.20		.04	.72								

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MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2.—Daily precipitation for May, 1910. District No. 7—Continued.

Stations.	River basins.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Louisiana—Cont'd.																																		
Houma|||	Coast							.40															.20	.70	1.90				.05				3.25	
Jennings|||	do							1.90						.05						.60	.54	.27	.70	1.92	1.17	.12							9.00	
Lafayette|||	do						1.00	1.00											.05	.06	.57	.70	1.39	.94	.28					T.	.07		7.05	
Lake Charles|||	do							.48												.47	.93	.59	.98	1.11									4.56	
Lakeside|||	do							.90												.81	.26	1.70	.90							.40			7.46	
Lawrence|||	do							.58	.61														.30	.20	.95								2.64	
Liberty Hill|||	Red													T.	T.			1.21	2.71	191	182	12	.70									.63	8.11	
Logansport|||	Sabine						.06							T.				2.00	1.55	2	45	1.00		.22	1.45	.84							9.57	
Melville|||	Red							1.04						T.						.28	.12	.67	1.14	.76	.65	.24	.09						4.99	
Minden|||	do			.03				.04											.96	.22	.22	.96	182	.70	.60	.02	.25					.40	6.58	
Mouroe|||	Ouachita																T.	.46	.12	102	.40	.20	.52	1.24	.24	.22							.46	5.99
Morgan City|||	Coast							.68														.52	.25	1.19	1.05	.49								4.18
Newellton|||	Mississippi																.45			.55	.53	.83	.10	.58									6.04	
New Iberia|||	Coast							.97										.55	.40	T.		.77	.80	1.65	.05								10	5.29
New Orleans (1)	do						T.	.86							T.			.51	1.05	T.	.22	.06	.50	1.30									15	4.65
New Orleans (2)	do							.57											.03	.78	.01	.27	.52	1.06									50	3.74
New Orleans (3)	do							.50											.52	1.32		.14	.13	.64	.93								.08	4.26
New Orleans (4)	do							.55											.02	.75		.15	.12	.49	1.02								.48	3.58
New Orleans (5)	do							.61											.91		.18	.08	.59	1.19								.70	4.25	
New Orleans (6)	do							.79											.62	1.39		.20	.08	.43	1.17							.23	4.91	
New Orleans (7)	do							.56											195	.32		.08	.02	.58	1.04								7.70	
New Orleans (8)	do							1.10											58	1.13		.16	.08	.36	1.32							.11	4.84	
Opelousas|||	do						.42	1.71						T.						.12	.81	1.03	.99	1.02	.45	T.				T.			6.35	
Plain Dealing|||	Red			.02	.17			.05										1.24			.61	.41	.1	.29	.29	.60							1.16	5.84
Rayne|||	Coast							.40						.12					T.	.50	.65	.90	1.27	.50							.43		4.77	
Reserve|||	do																			1.56		.08	.26	1.11	.53								3.80	
Robeline|||	Red																	1.10	1.70	1.00	.5	.75	.2	2.5	1.20								13.00	
Ruston|||	Ouachita																		.50	1.80	.75	.83	.50	.30							1.00	1.00	5.70	
St. Francisville|||	Mississippi							.52											.73			.63	.32	.90									3.10	
Schriever|||	Coast							.42	T.					T.	T.	T.	T.			.67	.05	.35	.96	1.04	.78	T.						.24	4.51	
Shreveport|||	Red	T.				.01		T.						T.	T.	T.	T.	1.37	.03	1.92	.03	.2	.91	1.04	.03							.26	6.82	
Simmesport|||	do							.37											.33	.15	.67	.53	.46	.87	.11	.01							5.50	
Southern Univ. Farm|||	Coast							.60											.30	1.70	T.		.60	.50	1.25							.20	5.05	
Sugartown|||	Red																			2.12	.32		.91	.99									4.54	
Tallulah|||	Mississippi																.31		1.07	2.27	.70	.02	.60								.35	5.32		

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 7, Lower Mississippi Valley.

Date.	Colorado.						New Mexico.				Texas.				Kansas.										Oklahoma.			
	Lamar.		Leadville.		Pueblo.		Albert.		Cimarron.		Amarillo.		Paris, H.		Dodge City.		Ellinwood.		Iola.		Liberal.		Wichita.		Ardmore, H.		Bartlesville.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	75	40	48	31	64	41	83	50	74	40	88	49	86	58	80	48	80	52	81	55	.....	.....	89	55	88	65	89	61
2...	48	37	41	32	41	35	74	42	62	38	61	44	87	64	48	39	70	41	77	47	.....	.....	61	43	86	65	74	60
3...	57	35	52	24	52	37	59	38	60	35	44	38	68	56	53	39	53	40	38	45	.....	.....	55	42	60	50	62	49
4...	62	43	56	29	74	37	62	44	71	40	48	43	59	58	51	45	56	45	61	47	.....	.....	57	48	60	50	62	52
5...	85	50	42	24	73	43	80	53	72	40	74	51	67	54	64	50	56	50	53	50	.....	.....	55	51	66	53	60	51
6...	74	46	42	22	70	47	76	49	68	34	72	50	80	54	58	47	56	49	54	47	.....	.....	56	49	86	54	75	54
7...	74	40	51	28	74	38	77	42	70	34	74	45	70	53	60	44	56	44	52	43	.....	.....	54	44	70	49	62	50
8...	87	39	59	28	80	46	84	50	76	40	84	47	75	45	79	38	75	35	68	40	.....	.....	72	42	77	46	77	42
9...	92	46	62	32	84	47	90	47	83	42	91	52	86	48	88	53	84	48	83	49	.....	.....	89	53	89	47	87	55
10...	87	47	62	35	85	48	89	54	79	46	95	57	90	51	92	56	90	60	86	56	.....	.....	92	64	95	56	92	60
11...	82	50	58	33	70	54	80	62	74	46	72	59	90	58	70	46	81	52	74	52	.....	.....	77	53	91	65	84	60
12...	74	43	58	30	70	47	71	45	69	38	71	45	79	61	70	42	69	39	65	44	.....	.....	67	44	75	55	70	48
13...	80	50	51	32	66	51	70	51	63	47	57	46	67	53	56	48	66	49	68	40	.....	.....	65	49	72	51	84	50
14...	64	50	52	30	65	51	69	46	66	43	53	45	68	49	52	47	57	50	69	45	.....	.....	62	48	61	53	69	55
15...	72	45	48	25	75	45	84	48	74	44	74	47	79	54	65	47	61	48	59	50	.....	.....	57	48	69	50	60	49
16...	68	40	31	18	51	35	68	43	60	36	62	46	87	90	60	43	58	50	65	52	.....	.....	60	50	85	55	71	58
17...	71	47	50	13	64	33	65	40	62	29	65	41	73	59	67	36	70	37	67	46	.....	.....	66	43	70	52	63	49
18...	88	42	51	26	71	45	75	50	62	40	59	40	73	56	70	44	76	42	73	45	.....	.....	74	49	69	52	76	47
19...	86	44	54	26	81	46	86	45	75	37	84	51	76	57	86	55	85	55	67	56	.....	.....	72	54	76	53	71	58
20...	82	46	52	27	78	44	88	57	73	35	86	55	86	62	89	54	89	57	82	61	.....	.....	85	62	90	58	85	62
21...	74	41	36	27	54	37	76	46	63	37	73	47	82	62	56	46	75	51	80	60	.....	.....	74	55	88	60	84	61
22...	61	36	45	17	64	39	55	47	57	33	47	40	80	60	60	44	57	46	65	54	.....	.....	58	51	74	57	65	60
23...	75	41	55	28	69	51	79	45	68	39	71	41	71	59	74	39	75	38	74	51	.....	.....	74	49	64	55	71	51
24...	78	46	59	32	68	48	81	46	78	36	81	50	79	55	78	43	78	44	72	49	.....	.....	75	50	88	52	74	52
25...	78	48	60	31	75	48	89	52	78	37	86	56	82	53	81	54	80	54	70	49	.....	.....	72	55	83	55	74	55
26...	78	54	52	32	74	49	82	56	75	39	80	56	85	54	76	55	74	55	72	55	.....	.....	77	56	85	57	81	57
27...	74	47	65	29	75	47	80	53	78	40	75	55	86	60	68	55	70	56	69	59	.....	.....	73	60	85	62	71	61
28...	84	54	66	42	82	50	94	50	85	46	87	55	89	61	83	54	84	55	81	60	.....	.....	83	58	88	58	85	61
29...	88	57	68	36	80	55	88	61	78	51	91	59	91	64	80	62	82	61	81	59	.....	.....	80	66	91	60	87	65
30...	93	54	66	40	87	57	95	57	83	48	94	60	94	64	94	59	87	56	80	56	.....	.....	90	64	94	64	90	65
31...	94	52	69	36	89	52	92	56	85	47	88	56	87	66	92	51	92	49	80	53	.....	.....	87	57	87	63	85	65
Mns	76.9	45.5	53.6	28.9	71.1	45.3	78.6	49.2	71.9	39.9	73.8	49.2	70.7	57.0	70.9	47.8	72.3	48.6	70.5	50.8	.....	.....	71.2	52.0	70.4	55.0	75.5	55.6

Oklahoma.														Missouri.												Lynnville, Ky.				Jackson, Tenn.			
Enid, H.		McAlester.		Mangum, H.		Muskogee.		Oklahoma.		Weatherford, H.		Woodward.		Caruthersville.		Ironton, H.		Lamar, H.		Olden.		Springfield.		Lynnville, Ky.		Jackson, Tenn.							
Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1...	94	68	87	65	97	63	81	62	87	64	96	62	90	49	85	60	76	60	83	58	80	62	81	62	81	61	.....	.....	.....	.....
2...	60	57	86	67	69	55	82	60	74	46	67	55	76	46	85	66	81	60	74	37	77	63	76	46	84	64	.....	.....	.....	.....
3...	62	46	73	51	55	44	60	50	59	46	57	41	57	42	75	49	59	43	54	45	71	36	55	42	73	49	.....	.....	.....	.....
4...	55	46	68	37	58	45	63	52	57	51	57	44	54	48	62	52	63	45	63	44	67	38	61	47	61	48	.....	.....	.....	.....
5...	64	50	67	51	69	58	64	56	62	54	63	49	61	53	70	47	77	33	61	44	68	33	63	46	69	41	.....	.....	.....	.....
6...	76	54	79	64	76	55	81	59	80	55	76	52	70	57	65	53	52	45	61	49	63	37	56	44	61	48	.....	.....	.....	.....
7...	90	49	75	51	73	47	73	51	60	50	67	48	62	41	75	53	56	45	55	46	59	38	51	44	73	52	.....	.....	.....	.....
8...	80	56	73	45	81	41	72	42	73	45	81	41	80	38	65	44	59	46	68	41	60	35	60	43	61	45	.....	.....	.....	.....
9...	93	48	84	49	92	51	83	43	86	52	93	48	90	52	82	45	81	41	80	45	78	41	78	46	76	49	.....	.....	.....	.....
10...	95	58	90	59	97	55	89	55	92	64	96	55	96	64	90	51	86	49	86	54	80	55	85	58	81	55	.....	.....	.....	.....
11...	73	66	88	69	88	59	88	67	82	61	84	65	84	61	90	61	83	48	81	62	86	64	79	53	85	61	.....	.....	.....	.....
12...	74	45	83	52	75	47	70	49	69	48	70	48	67	40	80	52	69	44	65	45	75	41	60	47	76	51	.....	.....	.....	.....
13...	67	47	71	50	69	52	73	55	65	54	67	48	62	48	72	47	70	35	69	39	77	46	64	41	67	42	.....	.....	.....	.....
14...	62	52	67	52	55	51	67	50	59	51	53	51	53	48	75	40	68	32	70	42	70	39	67	44	69	39	.....	.....	.....	.....
15...	66	50	60	50	77	50	56	49	58	49	67	49	60	48	62	48	58	40	60	50	70	40	56	48	68	45	.....	.....	.....	.....
16...	78	55	78	54	88	53	74	53	79	56	80	48	60																				

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 7—Continued.

Date.	Tennessee.				Arkansas.																Mississippi.								
	Memphis.		Union City.		Bentonville.		Corning.		Dardanelle. H		Eldorado. H		Fort Smith.		Little Rock.		Pine Bluff. H		Texarkana. H		Wynne. H		Clarksdale. H		Corinth. H		Greenville. H		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
1	80	63	84	61	82	64	81	67	84	62	84	59	84	63	79	63	84	58	83	63	84	62	84	61	83	62	85	60	
2	82	67	84	64	80	53	80	67	85	67	85	62	80	62	80	65	84	64	85	68	82	64	85	65	84	62	84	61	
3	73	53	78	49	55	45	76	49	66	63	74	67	62	54	72	57	72	64	69	66	68	66	79	68	79	62	82	64	
4	60	32	65	50	58	48	61	51	63	52	69	55	62	53	63	52	68	50	64	56	63	51	67	53	65	52	71	53	
5	70	49	72	44	68	50	68	45	65	48	72	52	68	54	70	51	74	50	69	59	70	48	75	49	72	48	77	53	
6	64	50	64	52	75	50	66	52	79	48	78	55	79	57	70	53	75	52	79	56	74	51	68	54	68	51	79	55	
7	69	54	72	53	81	46	65	53	61	54	77	59	58	50	67	55	68	62	71	57	71	51	79	52	78	54	83	60	
8	90	49	61	54	65	40	62	50	69	40	71	43	69	45	65	48	70	45	71	49	65	46	66	50	63	54	71	51	
9	76	52	80	50	81	43	79	47	83	42	81	47	83	48	80	47	80	45	80	50	79	44	79	44	79	44	81	44	
10	82	60	84	55	85	52	86	56	89	43	86	52	88	55	84	56	88	52	86	57	85	52	86	51	86	50	87	50	
11	84	66	87	61	85	57	88	66	91	52	87	62	87	63	85	63	88	62	87	61	87	62	87	55	86	57	89	58	
12	73	55	79	51	65	46	65	32	77	37	79	63	72	56	73	60	76	62	78	67	72	57	75	60	70	58	79	65	
13	65	51	69	44	68	39	70	45	74	42	69	49	73	49	69	52	72	50	68	53	69	41	72	50	68	46	72	52	
14	69	50	70	40	72	41	71	41	74	43	65	44	68	51	70	49	70	45	68	50	73	42	73	42	70	39	72	45	
15	58	54	67	42	56	48	69	50	58	49	80	48	56	49	62	53	72	52	78	54	58	50	74	47	70	46	82	51	
16	69	54	75	53	64	56	69	54	75	52	85	61	72	55	71	54	76	55	85	59	67	51	71	56	74	54	83	59	
17	74	59	73	61	68	49	73	59	71	56	73	60	71	56	71	61	84	60	68	59	77	57	78	56	76	60	77	59	
18	73	55	80	47	73	45	75	47	73	61	77	62	72	51	72	55	78	55	75	59	77	47	78	57	78	54	81	62	
19	74	61	76	53	69	56	74	65	75	55	73	62	72	60	76	62	80	60	74	60	78	57	78	61	75	54	74	63	
20	72	64	78	55	81	60	80	64	83	60	85	64	84	61	79	64	80	65	84	64	79	61	74	63	73	62	73	64	
21	72	64	80	62	80	59	80	65	81	63	84	65	84	61	78	63	72	60	84	64	76	64	78	63	72	62	82	63	
22	78	61	79	61	69	58	73	59	61	73	62	72	60	72	61	70	60	75	61	77	64	67	64	67	64	80	64	75	63
23	76	61	71	62	66	56	75	60	75	59	76	60	69	60	76	59	80	58	71	60	79	58	77	61	80	62	76	60	
24	69	61	74	61	70	49	75	58	75	58	75	59	74	58	73	59	75	60	75	61	71	60	72	63	76	64	74	59	
25	76	57	79	50	67	47	74	50	74	48	79	51	72	50	76	57	78	50	78	52	78	49	77	53	76	56	79	53	
26	79	62	78	54	77	54	74	59	81	49	84	56	80	56	80	62	82	57	82	55	82	54	82	56	80	52	86	53	
27	83	62	83	58	77	69	77	59	84	54	85	61	83	66	83	61	87	60	84	63	82	59	86	61	84	58	89	57	
28	86	64	86	56	84	62	85	56	88	61	87	62	88	64	86	64	90	62	86	64	87	62	87	63	81	58	91	61	
29	86	68	88	60	81	63	86	64	88	62	90	64	89	67	88	69	90	64	90	66	90	61	90	63	90	58	92	63	
30	85	65	83	57	86	61	83	58	90	66	91	66	89	66	88	65	90	66	90	66	89	60	90	70	86	66	91	68	
31	76	62	77	53	77	55	78	58	82	62	81	64	82	64	79	65	82	65	82	66	80	61	80	64	76	62	82	65	
Means	74.0	58.2	76.6	54.0	72.1	52.0	75.4	55.7	76.8	54.2	79.2	57.9	75.5	56.9	75.4	58.2	78.5	57.1	78.0	59.5	76.4	55.2	78.2	57.3	76.7	55.8	80.6	57.8	

Date.	Mississippi.						Louisiana.																			
	Kosciusko. H		Natchez. H		Vicksburg.		Alexandria. H		Baton Rouge. H		Covington. H		Lafayette. H		Lake Charles. H		Monroe. H		New Orleans.		Robeline. H		Schriever. H		Shreveport.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	83	59	88	62	84	62	87	56	84	69	87	57	84	57	83	54	91	58	82	65	87	54	89	64	85	60
2	83	60	88	63	81	62	86	62	86	65	89	65	86	63	88	56	82	64	83	66	86	67	89	58	86	66
3	86	61	88	62	83	60	90	59	85	68	88	63	89	62	92	60	85	61	86	64	84	64	91	59	79	60
4	67	38	77	59	74	56	82	59	86	67	92	62	87	62	93	61	77	56	83	68	82	59	91	61	73	57
5	76	52	81	57	77	55	84	59	87	65	88	63	87	61	91	60	80	55	83	65	81	58	88	62	75	56
6	83	54	87	60	81	61	88	59	85	69	90	64	83	62	87	56	85	58	84	68	86	58	89	60	79	64
7	80	57	89	65	82	66	71	62	83	70	86	64	87	66	88	55	86	62	82	69	84	63	87	62	78	60
8	71	54	78	57	72	57	88	59	75	65	75	62	78	62	86	54	83	54	72	60	79	48	75	63	75	52
9	86	64	82	52	77	54	86	49	79	59	83	58	81	60	89	53	83	50	80	62	86	45	86	54	83	53
10	81	47	89	55	83	59	90	52	82	63	87	54	85	60	92	55	87	53	83	66	90	47	89	57	88	58
11	86	54	88	61	84	66	90	58	85	65	87	56	85	62	89	60	86	57	86	66	89	52	88	56	88	65
12	73	61	84	66	78	61	86	63	84	68	92	59	88	64	93	58	84	65	86	66	83	65	90	56	81	62
13	72	46	77	54	72	53	79	54	83	62	84	52	79	56	87	54	84	53	78	63	78	45	83	54	72	55
14	68	41	78	57	69	52	69	56	78	66	82	55	75	59	82	56	70	49	75	63	84	46	86	58	66	54
15	77	44	85	58	79	55	84	51	84	61	85	53	83	57	81	55	80	52	80	61	84	50	88	52	78	57
16	84	57	90	63	85	64	87	59	86	67	89	58	86	63	89	54	85	62	84	64	90	70	93	50	85	69
17	80	57	76	69	77	66	72	67	85	70	84	66	85	68	88	62	78	65	83	69	68	65	91	67	76	63</

Climatological Data for May, 1910.
DISTRICT No. 8, TEXAS AND RIO GRANDE VALLEY.

BERNARD BUNNEMEYER, District Editor.

GENERAL SUMMARY.

There was quite a conspicuous difference in the climatological conditions between the western and the eastern portions of the district. In the former, embracing the entire Rio Grande and Rio Pecos valleys, the temperature was excessive and the precipitation decidedly deficient; in the latter, covering the Texas watersheds from the Nueces to the Sabine, just the opposite conditions prevailed. Deficiencies in precipitation occurred, however, over portions of several of the Texas watersheds, especially that of the Colorado. Most of the precipitation occurred from the 12th to the 23d, and during this period the droughty conditions in Texas were almost entirely relieved. In fact in some sections of this State agricultural operations were retarded by too much moisture in the ground.

The greatest monthly precipitation in Colorado was 0.95 inch at Platoro; in New Mexico, 1.54 inch at Gallinas Planting Station; and in Texas, 12.40 inches at Cuero. There was practically no precipitation at 16 stations in New Mexico and at 2 stations in Texas, while at 14 other stations in New Mexico and at 1 station in Colorado the monthly amounts did not exceed 0.10 inch.

Excessive precipitation of 2.50 inches or more in 24 consecutive hours was reported from 31 stations in Texas, the greatest being 7.08 inches at San Juanito on the 18th, and the next greatest, 6.20 inches at Pierce on the 19th. Half of these heavy rains occurred in the coastal plains and lower valleys, and the other half in the interior, mostly in the Brazos, middle Trinity, and upper Neches valleys.

Light to moderate snow fell on several days in the northern mountain districts, the heaviest monthly amount being 8 inches in Colorado at Cumbres, and 8.2 inches in New Mexico at Harveys Upper Ranch. Thunderstorms were of frequent occurrence in the eastern portion of the district, especially from the 18th to the 23d, and the accompanying wind and hail caused more or less damage in numerous localities, but the damages were slight compared with the value of the precipitation. The highest wind velocity recorded at regular Weather Bureau stations was 50 miles from the southwest at Fort Worth on the 21st, and from the west at Galveston on the 23d. The number of days with 0.01 inch or more of precipitation averaged 4 in Colorado, 2 in New Mexico, and 6 in Texas. The sunshine was ample, although in portions of the district it averaged below the normal.

TEMPERATURE.

The mean temperature averaged 3.4° above the normal in Colorado, and 1.3° above in New Mexico, while in Texas it was 0.9° below normal. There were no unusual changes in temperature during the month, although several cool periods of short duration occurred. The average daily range was about 10° on the coast and increased to 36° in the remote interior. Damaging frosts occurred in the northwestern portion of the district on the 6th and 7th, and at the higher stations on the 17th and 23d. There were no frosts in the Texas portion of the district. The warmest weather occurred generally during the last 5 or 6 days of the month.

The extreme temperatures reported were: In Colorado, 92° at Saguache on the 30th and 18° at Wagon Wheel Gap on the 17th; in New Mexico, 102° at Socorro on the 29th and 30th, and 21° at Red River Canyon on the 6th; and in Texas, 107° at Zapata on the 22d and 25th, and 39° at Plainview on the 3d. The local monthly means ranged from 47.6° to 55.0° in Colorado, from 47.5° to 72.3° in New Mexico, and from 64.5° to 83.7° in Texas.

PRECIPITATION.

A decided deficiency in precipitation occurred throughout the watersheds of the Rio Grande and Rio Pecos. In the former the deficiency averaged 0.45 inch over the upper reaches and 1.61 over the lower; in the latter the deficiency averaged 0.86 inch in New Mexico and 0.98 inch in Texas. A large number of stations in these watersheds had practically no precipitation. Amounts equaling or slightly exceeding 1 inch occurred only in some of the upper and lower portions of the Rio Grande Valley and in the extreme upper portion of the Rio Pecos.

The precipitation over the Texas watersheds exceeded the normal, except in the case of that of the Colorado which had a deficiency of 1.65 inch. The excess ranged from 0.03 inch in the Trinity watershed to 2.62 inches in the coastal plains. The following are the average monthly amounts in inches for the various watersheds: Nueces, 2.29; San Antonio, 4.72; Guadalupe, 4.50; Lavaca, 6.80; Colorado, 2.53; Brazos, 4.75; Trinity, 5.14; Neches, 6.44; Sabine, 5.00; and coastal plains, 5.50. Compared with the conditions of the previous month there was an increase of 1 to 3 inches, except in the Nueces and Colorado watersheds. The Nueces had a nominal decrease of 0.12 inch, while the Colorado averaged very nearly the same. Heavy amounts of over 8 inches occurred over a broad belt running parallel to the coast, and in the middle portions of the Brazos and of the Neches valleys.

RIVER CONDITIONS.

High water continued in the Rio Grande during the month. At the Leasburg Project the maximum discharge amounted to 10,000 second-feet, but no damage was done to the Reclamation Project, although at various points along the river the banks were eroded, and in some instances county bridges were damaged. At San Marcial the adobe walls of several buildings were softened by the high water. At El Paso the river began to recede slowly on the 7th and continued to fall until the close of the month, the total fall from the 7th to the 31st being only 3.1 feet. A rise of 3 feet occurred at Zapata and of 10 feet at Llano Grande, and at the close of the month the river at the latter place was about 5 feet above low water of March. There was an abundance of water for all purposes.

Although very little rain has fallen on the Rio Pecos watershed it was reported that the supply of water stored at the Carlsbad Project would be sufficient for many weeks. At the Hondo Project there was no water available for irrigation during the month.

The Texas rivers, as a rule, discharged a smaller volume of water than during the preceding month notwithstanding a heavier precipitation, but the volume discharged was much larger than during the corresponding month of last year. Sharp rises occurred in several rivers which were of great benefit to lumbermen and sawmills. Flood stages were exceeded in the Colorado at Columbus on the 23d, and in the Guadalupe at Victoria on the 24th, but no damage was caused.

MISCELLANEOUS.

Ball lightning.—This phenomenon is comparatively rare and so far as known has never been satisfactorily accounted for. The luminous balls move rather slowly and usually disappear with an explosion. Mr. G. A. Eisenlohr, cooperative observer at Dallas, Tex., has furnished the following report of an observation of this phenomenon:

About 3:30 a. m. of the 19th a very severe thunderstorm passed over this region; in fact, several thunderstorms; one in the east, one in the south, and one in the northwest. The one in the east was one of very brilliant display of lightning, blinding in its brilliancy, and the thunder following did not

manifest itself in the usual clap and rolling sound, but resembled more the detonations of cannons fired in rapid succession. During these storms I had the opportunity of seeing a luminous ball entering my south window and floating in the direction of the electric light, which was not glowing at the time. This lamp is suspended about 12 inches over an oak table. When the luminous ball reached the table it bounded and rebounded, diminishing in size until it vanished. I watched the electrical display for over an hour and at times it seemed as though the whole atmosphere was filled with light.

From newspaper accounts it appears that luminous balls of fire were observed also in other parts of the city.

Rio Grande Project.—From the Reclamation Record for June, 1910, it is gleaned that the work on the survey for the high line canal, extending from the Leasburg canal in Mesilla Valley to the vicinity of El Paso, is to be suspended and that the force is to be employed north of San Marcial in a study of irrigation conditions on the Rio Grande. The Secretary of the Interior has directed that the work on the Engle Dam be so planned as to begin upon the foundations in July, 1911. This dam occupies a different status from that of the other approved projects, because the citizens of the Republic of Mexico are interested in it and the faith of this Government is pledged by treaty to begin and complete it as early as possible.

IRRIGATION IN TEXAS.

(Concluded from the April Review.)

San Felipe Agricultural, Manufacturing and Irrigation Company, Del Rio.—Aggregate acres served, 1,200; location, Val Verde County, near Del Rio.

San Felipe Canal Company, San Felipe, Austin County.

San Jacinto Rice Company, Elena, Harris County.

San Juan Plantation Company, San Juan.—Aggregate acres served, 700; capacity of canals, 300 more acres, of pumping plant, 1,000 more; acres that could be served by contemplated equipment, 5,000; location, Hidalgo County, near San Juan and Savage post-offices.

San Jose Irrigation and Power Company, Knickerbocker.—Aggregate acres served, about 1,500; location, Irion and Tom Green counties, near Knickerbocker post-office. The plant is a gravity system, but individual pumping plants are also used, taking water from Dove Creek below the company's diversion dam.

Santa Maria Irrigation Company, Santa Maria, Cameron County.

Security Rice and Irrigation Company, Bay City, Matagorda County.

Southern Irrigation Company, Lane City.—Aggregate acres served, 16,000; location, Wharton County, near Arnim post-office.

Southwestern Rice Company, Houston, Harris County.

Spindletop Canal and Irrigation Company, Beaumont, Jefferson County.

Tankersley Ditch and Irrigation Company, Knickerbocker, Tom Green County.

Texas Irrigation Company, successors to Tres Palacios Rice Irrigation Company, Dallas, Tex.—Location, Matagorda County near Buckeye post-office; aggregate acres served, 9,000; additional acreage that could be served by contemplated equipment, 4,000.

Texas Land and Irrigation Company, Beaumont.—Aggregate acres served, 500; additional acreage that could be served by contemplated equipment, 1,500; location, Jefferson County, near Beaumont.

Toyah Valley Irrigation Company, Bogata, Red River County.
Val Verde Irrigation Company, Del Rio, Val Verde County.
Wichita Land and Irrigation Company, Anson, Jones County.
Yoakum Land and Irrigation Company, Fordyce, Hidalgo County.

Zimmerman Canal, Zimmerman.—Location, Pecos County, near Zimmerman post-office. The plant is being enlarged and the aggregate number of acres to be served will be 30,000.

EXPERIMENTAL DETERMINATION OF THE RELATION OF FORESTS TO STREAM FLOW.

By F. H. BRANDENBURG, Section Director, Denver, Colo.

To secure definite information concerning the much discussed question of the relation of forests to stream flow is the purpose of the experiment which has just been started under the general direction of the United States Forest Service. Three bureaus of the Government will cooperate in conducting this experiment in order to cover thoroughly every phase of the problem, so that definite knowledge may be secured regarding a subject which has recently excited so much controversy.

The United States Geological Survey, the Weather Bureau, and the Forest Service will have a share in the establishment and conducting of the experiment which it is expected will extend over a long term of years.

The prime object of the experiment is to determine as accurately as possible the difference in behavior of two streams, one flowing from a watershed which is covered with forest growth, and the other from a watershed which has been denuded of its forest cover.

The locality selected for the experiment is near Wagon Wheel Gap, in Mineral County, Colo., and the streams to be measured are small tributaries of the Rio Grande. Each of the two streams drains an area of about 200 acres. At a point on each stream, just above their junction, dams will be constructed which will make it possible to measure accurately the flow of water over these dams, as well as the accumulation of silt behind the dams.

Representatives of the three bureaus are now on the ground conducting their respective shares of the work. The Geological Survey will make a careful examination of the geology of the area included in the experiment in order to determine to what extent, if any, there may be a subsurface flow of water. The Weather Bureau will conduct all measurements of precipitation, both rain and snow fall, evaporation, and the run-off. Standard instruments will be used for measuring all the different factors which play a part in the experiment.

Log cabins to serve as headquarters for the officials who will have charge of the experiment are being constructed and will be completed within a short time. The officials in charge will live at these headquarters all the year round so that the experiment will have constant attention, and no point which may have any influence upon the outcome will be overlooked.

Experiments along the same general lines have been conducted in certain European countries, but heretofore nothing has been attempted in this country on such an elaborate scale. It is confidently expected by every one concerned in the work that the results of this experiment will go a long way toward settling beyond dispute many points which have been discussed in the magazines and daily press during the past year.

TABLE 1.—Climatological data for May, 1910. District No. 8, Texas and Rio Grande Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Colorado.																				
Blanca.	Costilla.	8,403	1	50.4		82	29†	20	17	44	0.32		0.13	2.0	4	11	20	0	sw.	L. C. Audrain.
Cumbres.	Conejos.	10,015	3								0.78		0.55	8.0	3	9	20	2	sw.	Ida M. Lively.
Garnett.	Costilla.	7,576	17	51.5	+ 3.1	84	29†	22	17	46	0.46	- 0.29	0.21	0.0	4	13	13	5	w.	Chas. Speiser.
Hermitt.	Hinsdale.	9,843									0.30		0.15	2.0	3	15	9	7		Marion Mason.
La Veta Pass.	Costilla.	9,000									0.40		0.40	5.0	1	22	0	9	w.	Norvin R. Lively.
Manassa.	Conejos.	7,700	4																	J. B. Chapman.
Platoro.	do.	9,675	2								0.95		0.26	7.0	9	15	10	6	w.	Walter R. Hook.
Saguache.	Saguache.	7,740	18	55.04		92	30	244	17	404	0.02	- 0.80	0.02	T.	1	13	7	11	w.	Eugene Williams.
San Luis.	Costilla.	7,794	19	50.8	+ 1.1	85	30	23	6	46	0.86	- 0.34	0.40	T.	4	7	23	1	sw.	P. B. Albright.
Wagon Wheel Gap.	Mineral.	8,434	11	47.6	+ 5.8	80	28†	18	17	51					15	2	14		sw.	Ellwood Bergery.
New Mexico.																				
Agricultural College.	Dona Ana.	3,863	44	71.2	+ 0.9	99	28†	43	6	44	T.	- 0.25	T.	0.0	0	17	14	0		New Mexico Agri. College.
Alamogordo (near).	Otero.	4,338	9								T.	- 0.13	T.	0.0	0					Geo. C. Bemis.
Alamogordo.	do.	4,320									T.	- 0.13	T.	0.0	0					El Paso & Southwest. R. R.
Albuquerque.	Bernalillo.	5,206	34																	University of New Mexico.
Ancho.	Lincoln.	6,112									0.00		0.00	0.0	0	14	1	16		El Paso & Southwest. R. R.
Artesia.	Eddy.	3,350		69.4		99	28	38	23	49	0.27		0.21	0.0	3	15	10	6	se.	Will Benson.
Aspen Grove Ranch.	Rio Arriba.	9,000									0.53		0.25	0.9	3	5	24	2		Junius D. Maupin.
Bateman's Ranch.	do.	8,900									0.20		0.20	T.	1	18	10	3	w.	John W. Bateman.
Bluewater.	Valencia.	6,732	8	57.0		95	30	25	6	55	0.52		0.39	0.0	3	10	19	2	nw.	Bluewater Development Co.
Bluewater Reservoir.	do.	9,000	1																	Do.
Boaz.	Chaves.	4,154	1	65.2		96	10	32	23	49	0.28		0.16	0.0	3	3	26	2	w.	D. C. Savage.
Capitan.	Lincoln.	6,348																		El Paso & Southwest. R. R.
Carlsbad.	Eddy.	3,120	15	72.3	+ 0.2	101	10	39	3	47	0.20	- 0.29	0.15	0.0	2	15	11	5	se.	U. S. Reclamation Service.
Carrizoso.	Lincoln.	5,429	2								T.		T.	0.0	0	16	15	0	sw.	A. H. Harvey.
Chama.	Rio Arriba.	7,851	11	52.0	+ 1.8	86	30	22	6	48	0.32	- 1.03	0.32	3.0	1	27	3	1	sw.	Frank C. Johnson.
Cloudcroft.	Otero.	8,650	7	58.8		78	16†	34	20	38	0.10		0.10	1.0	1	19	9	3	w.	El Paso & Southwest. R. R.
Corona.	Lincoln.	6,666									0.12		0.08	0.0	2	20	6	5	se.	Do.
Coyote.	do.	5,800									0.22		0.22	0.0	1	11	2	18	w.	Do.
Cundiyo.	Santa Fe.	6,889	1								0.56		0.15	0.0	5	13	6	12	w.	Teofilo Viji.
Demonstration Farm.	San Miguel.	6,800	1								0.05		0.05	0.0	1					Erb & Westerman.
Duran.	Torrance.	6,272	1								T.		T.	0.0	0	22	5	4		W. H. Birkhead.
Edison Mine.	Taos.	10,600																		Frank L. Paxton.
Elida.	Roosevelt.	4,345																		M. W. Waldron.
Elk (near).	Chaves.		11																	Boyd Williams.
Escondido.	Otero.	4,014				98	28†				T.		T.	0.0	0	14	8	9	sw.	El Paso & Southwest. R. R.
Espanola.	Rio Arriba.	5,590	12	64.8		93	28	34	23	47	0.25	- 0.68	0.12	0.0	3	19	8	4	sw.	Mrs. E. F. McBride.
Estancia.	Torrance.	6,140	5	61.0		88	31	33	9	52	0.04		0.04	0.0	1	20	11	0	w.	New Mex. Central R. R.
Fort Stanton.	Lincoln.	6,231	32	60.4	+ 1.3	94	28	32	23	47	0.18	- 0.52	0.14	0.0	3	14	9	8	w.	U. S. Sanitarium.
Fort Sumner.	Guadalupe.	3,960	7	65.1		96	30	36	5	45	T.		T.	0.0	0	18	5	8	s.	P. A. Manzanares.
Gallinas.	Lincoln.	6,635									0.10		0.10	0.0	1	12	6	13	e.	El Paso & Southwest. R. R.
Gallinas Planting Station.	San Miguel.	7,500	3	53.4		85	28†	29	22	47	1.54		0.70	T.	5	4	23	4	se.	U. S. Forest Service.
Harvey's Upper Ranch.	do.	9,400	1								1.29		0.37	8.2	7	9	21	1	se.	Simon B. Warner.
Hillsboro.	Sierra.	5,224	13	58.2		92	31	29	13	39	T.	- 0.48	T.	0.0	0	23	3	5	w.	Dr. Frank I. Givens.
Hodges.	Taos.	8,484									0.42		0.25	0.0	3	19	6	6	nw.	Jas. D. Bird.
Hondo Reservoir.	Chaves.	3,904	1	68.5		99	10	39	6	48	0.75		0.42	0.0	2	17	10	4	se.	U. S. Reclamation Service.
Hope.	Eddy.		3																	C. M. Bott.
Hopewell.	Rio Arriba.	9,500																		John T. Blanton.
Jemes Springs.	Sandoval.	6,100																		Linus L. Shields.
Laguna.	Valencia.	5,840	5	62.7		95	28†	32	6	46	0.50		0.50	0.0	1	17	5	9	w.	Gus Weiss.
Lagunita.	Guadalupe.	4,500	5	63.8		95	28	34	6	51	0.03		0.03	0.0	1	5	11	15	s.	P. A. Turnbull.
Lake Valley.	Sierra.	5,413	5								0.15		0.15	0.0	1	13	17	1	sw.	Wm. P. Keil.
Las Vegas.	San Miguel.	6,384	23	57.6	+ 0.3	95	28	29	7	48	0.13	- 1.74	0.08	0.0	2	20	9	2	w.	Dr. Wm. Curtis Bailey.
Liston.	Chaves.										0.84		0.33	0.0	3	12	15	4	s.	H. G. Liston.
Los Lunas (near).	Valencia.	4,900	20										T.	0.0	0	15	3	13	w.	Richard Pohl.
Los Tancos.	Guadalupe.	4,919									T.		T.	0.0	0	15	3	13	w.	El Paso & Southwest. R. R.
Magdalena.	Socorro.	6,557	5	61.2		91	28†	34	23	46	0.52		0.52	0.0	1	14	14	3	w.	Wm. Pender.
Malaga.	Eddy.	3,000																		Capt. Chas. Grapes.
Mineral Hill.	San Miguel.	7,050	5								0.10		0.10	0.0	1	7	22	2	sw.	W. M. Nelson.
Monterey.	Otero.	4,436									0.00		0.00	0.0	0	21	1	9	sw.	El Paso & Southwest. R. R.
Monument.	Eddy.	3,500	4																	Jas. M. Cook.
Mountainair.	Torrance.	6,547	8	60.8		92	29	30	23	49	0.25		0.14	0.0	2	18	13	0	sw.	Mrs. John W. Corbett.
Newman.	Otero.	3,989				100	29				T.		T.	0.0	0	23	7	1	w.	El Paso & Southwest. R. R.
Noria.	Dona Ana.	4,114									0.05		0.06	0.0	1	20	3	8	ne.	Do.
Orange.	Otero.			67.0		100	10	32	3	54	T.		T.	0.0	0	10	15	6	w.	Jas. Brownfield, Jr.
Orogrande.	do.	4,171									0.16		0.11	0.0	3	12	13	6	w.	El Paso & Southwest. R. R.
Oscara (near).	Lincoln.	5,016	1								0.21		0.08	0.0	4	21	7	3	se.	Eugene F. Jones.
Otis.	Eddy.	3,100	1								0.16		0.13	0.0	2					A. M. Hove.
Otto.	Santa Fe.	6,200	1								0.06		0.06	0.0	1	16	14	1	sw.	W. K. Davis.
Pastura.	Guadalupe.	5,285				98	30	42	20	50	0.06		0.06	0.0	1	16	14	1	sw.	El Paso & Southwest. R. R.
Picacho (near).	Lincoln.																			P. D. Southworth.
Red River Canyon.	Taos.	8,650	2	47.5		78	27	21	6	47	1.00		0.80	T.	3	19	8	4	e.	Mrs. L. R. Penn.
Rincon.	Dona Ana.	4,030	12	71.2	+ 3.4	100	28†	43	6	47	T.	- 0.22	T.	0.0	0	16	6	9	sw.	Chas. H. Raitt.
Rio Grande Dam.	Sierra.	4,265	12	71.2	+ 5.7	99	28†	45	11	42	0.25	- 0.06	0.20	0.0	2	16	9	6	sw.	U. S. Reclamation Service.
Rosedale.	Socorro.	6,910	5	62.1		89														

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 1.—Climatological data for May, 1910. District No. 8—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.					Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		Prevailing wind direction.
Texas.																			
Abilene	Taylor	1,738	25	71.4	- 0.5	97	11	45	3	34	2.11	- 1.61	0.99	0.0	6	9	6	16	U. S. Weather Bureau.
Albany	Shackelford	1,429	16	68.4	- 3.2	96	26	43	3	44	3.55	- 0.20	1.84	0.0	4	17	3	11	N. L. Bartholomew.
Alvin	Brasoria	49	11								10.80	+ 6.94	3.36	0.0	7	8	9	14	F. A. Smith.
Anna	Chambers	23	1								7.79		4.00	0.0	7	7			B. H. Collins.
Austin	Travis	593	24	73.6	- 2.1	91	31	56	23	28	2.94	- 1.51	0.90	0.0	7	15	5	11	A. Deussen.
Ballinger	Runtels	1,637	15	72.8	- 0.4	100	11	47	23	46	1.42	- 2.18	0.82	0.0	2	25	4	2	E. M. Eubank.
Barstow	Ward	2,573	3	72.8		100	11	46	21	53	T.		T.	0.0	0	13	5	11	W. H. Denis.
Bay City	Matagorda	53	13	74.9		93	31	55	24	31	3.59		1.95	0.0	7	13	0	18	E. C. Quereau.
Beaumont	Jefferson	29	14	75.8	- 1.5	93	12	58	25	27	7.59	+ 4.58	2.61	0.0	7	13	0	18	John Bender.
Beeville	Bee	225	14	73.2		105	11	45	3	49	4.07	+ 0.89	1.39	0.0	5	17	8	6	L. E. Dickey.
Big Springs	Howard	2,396	12	73.2		105	11	45	3	49	0.69	- 2.59	0.45	0.0	5	17	8	6	R. Reagan.
Blanco	Blanco	1,350	14	72.4	+ 0.2	90	11	52	25	31	2.64	+ 0.05	1.09	0.0	5	17	11	3	R. C. Crist.
Boerne	Kendall	1,412	18	75.4	+ 1.7	96	27	56	31	38	1.91	- 2.09	1.50	0.0	9	12	12	7	F. W. Schweppe.
Booth	Fort Bend	81	9								7.37		2.50	0.0	9	14	0	17	T. R. Booth.
Bowie	Montague	1,113	16	69.5	- 1.3	95	10	47	3	34	3.89	- 1.26	1.01	0.0	11	13	4	14	Craig Anderson.
Brasoria	Brasoria	25	21	75.0		92	12	52	25	38	3.77	+ 0.60	1.25	0.0	9	16	4	5	Mrs. M. A. Stevens.
Brasoria	Palo Pinto	801	1								5.37		2.90	0.0	5	14	6	11	Robt. E. Boyett.
Brenham	Washington	350	21	73.9	- 1.2	91	11	58	9	32	3.59	+ 1.18	1.35	0.0	8	14	5	12	Mrs. B. F. Sloan.
Bridgeport	Wise	754	1								5.37		1.30	0.0	10	19	1	11	Wm. M. Wilkinson.
Brownsville	Nueces	12	14	78.0	- 0.8	91	27	50	21	37	3.51	+ 0.47	1.31	0.0	6	17	4	10	G. H. Ritter.
Brownville	Cameron	38	21	78.2	- 0.3	94	8	58	24	33	1.41	- 0.75	1.00	0.0	5	9	15	7	U. S. Weather Bureau.
Brownwood	Brown	1,342	20	72.0	+ 0.7	97	11	47	34	41	2.57	- 0.61	1.95	0.0	5	9	15	7	Mrs. Pearl Smith.
Cameron	Milam	2	2	74.4		94	2	55	8	32	5.29		2.81	0.0	6	24	6	1	J. E. Watts.
Carmona	Polk	330	2								2.99		1.01	0.0	10	14	12	5	M. S. Spittler.
Claytonville	Fisher	2,100	6	71.0		97	11	40	24	51	2.18		1.09	0.0	7	12	12	7	Wm. Lanier.
Coleman	Coleman	1,710	16	73.2		93	11	50	23	30	1.70	- 2.70	1.70	0.0	1	18	6	4	J. H. Tucker.
College Station	Brasoria	308	19	73.6	- 0.3	94	31	53	32	53	5.58	+ 1.05	2.57	0.0	11	17	11	3	Prof. G. S. Fraps.
Colorado	Mitchell	2,066	16	71.7	- 0.8	98	1	43	34	42	1.40	- 1.04	0.62	0.0	5	18	9	4	R. M. Webb.
Columbia	Brasoria	34	21	74.8	- 0.4	95	12	53	25	35	5.23	+ 2.28	2.50	0.0	5	18	9	4	R. B. Loggins.
Columbus	Colorado	206	6								3.80		1.20	0.0	5	8	16	7	Mrs. Sophie Bridge.
Comstock	Valverde	1,557	1								4.05	+ 1.27	1.58	0.0	6	8	20	3	A. D. Brown.
Corpus Christi	Nueces	20	23	75.6	- 0.9	88	31	61	7	21	5.98	+ 1.17	1.71	0.0	9	21	1	9	U. S. Weather Bureau.
Cornaca	Navarro	445	21	72.2	- 1.3	94	30	50	14	38	11.25		4.17	0.0	6	16	9	6	E. L. Gibson.
Crockett	Houston	350	6	73.6		95	30	56	25	29	12.40	+ 8.92	4.10	0.0	8	14	6	11	A. M. Rencher.
Cuero	DeWitt	177	21	69.8	- 1.5	95	30	56	25	29	4.59	+ 0.04	1.06	0.0	8	12	3	16	H. R. Froese.
Dallas	Dallas	466	21	75.8	- 2.8	97	10	50	8	45	8.00	+ 4.85	3.25	0.0	4	21	7	3	G. A. Eisenlohr.
Danevang	Wharton	145	14	75.0	- 1.5	93	18	54	11	35	3.54		1.10	0.0	6	9	14	8	H. P. Hermansen.
Deatur	Wise	1,047	4								0.35	- 2.41	0.23	0.0	5	14	14	3	Fort Worth & Denver Ry.
Del Rio	Valverde	952	4	77.1	+ 0.2	97	25	49	24	44	0.55		2.20	0.0	4	20	6	5	U. S. Weather Bureau.
Devine	Medina	653	12	77.4		97	30	55	23	35	3.08		3.40	0.0	6	9	15	7	M. A. Keller.
Dialville	Cherokee	575	12	71.8		91	30	50	8	30	6.17		3.40	0.0	6	9	15	7	J. M. McKnight.
Dilley	Frio	569	15								1.00		0.83	0.0	2				John W. Miller.
Dublin	Era	1,466	15	69.7	- 1.3	92	9	48	15	35	1.84	- 2.90	0.54	0.0	4	11	11	9	Jno. O. Shafer.
Duval	Travis	820	21	72.9	- 2.3	93	31	54	23	30	2.44	- 1.27	0.65	0.0	7	14	10	7	J. C. Edgar.
Eagle Pass	Maverick	800	21	79.5	+ 0.3	100	11	53	24	45	0.45	- 2.68	0.25	0.0	2	2	26	3	Joe Metcalfe.
Edna	Jackson	71	1								8.11		2.50	0.0	7				E. L. Faires.
El Paso	El Paso	3,762	31	73.8	+ 1.7	98	28	50	23	32	T.	- 0.35	T.	0.0	0	21	7	3	U. S. Weather Bureau.
Encinal	La Salle	558	2	79.8		100	21	55	24	37	2.23		1.15	0.0	3	10	16	5	H. C. Braden.
Fairland	Burnet	1,000	1	73.0		94	21	51	23	34	2.41		0.96	0.0	9	14	12	5	R. L. Bush.
Falfurrias	Starr	3	3	77.8		95	11	56	25	38	4.35		4.00	0.0	4	21	9	1	W. A. Gardner.
Flatonis	Fayette	483	2	73.6		95	31	55	24	28	3.44		0.70	0.0	9	9	9	13	Fred W. Lau.
Flint	Smith	483	2	71.0		91	30	47	24	39	3.85		1.73	0.0	6	14	9	8	P. C. Carter.
Fort Clark	Kinney	1,050	23	75.5	- 1.9	95	10	52	23	38	1.30	- 2.35	0.70	0.0	2	10	14	7	Post Hospital.
Fort McIntosh	Webb	460	24	83.6	+ 2.8	103	15	68	24	31	1.18	- 1.13	0.40	0.0	5	15	3	13	Do.
Fort Stockton	Pecos	3,050	13	74.6	+ 2.1	102	11	48	41	49	0.52	- 0.98	0.25	0.0	3	8	20	3	U. S. Weather Bureau.
Fort Worth	Tarrant	670	15	70.3	- 2.9	93	10	48	14	31	5.76	+ 1.61	2.65	0.0	10	14	9	8	Arthur Striegler.
Fredericksburg	Gillespie	1,742	21	71.5	- 0.6	90	31	53	18	30	2.12	- 1.38	0.91	0.0	5	8	16	7	J. L. Hickson.
Gainesville	Cooke	738	21	69.2	- 1.5	97	29	49	9	44	1.74	- 3.58	0.49	0.0	9				U. S. Weather Bureau.
Galveston	Galveston	69	40	74.0	- 1.4	83	31	61	23	17	5.10	+ 1.87	1.97	0.0	9	14	15	2	John Ryan.
Gatesville	Coryell	795	6	71.4		89	11	52	7	30	4.50		1.90	0.0	5	13	18	0	Prof. R. F. Young.
Georgetown	Williamson	750	13	73.1	- 0.8	94	9	53	8	32	3.69	- 0.93	1.37	0.0	9	12	15	4	J. M. Johnson.
Gonzales	Gonzales	299	8								4.68		1.07	0.0	7	11	7	13	C. W. Johnson.
Graham	Young	1,040	11	72.4	- 0.6	100	8	47	3	53	3.60	- 0.62	1.45	0.0	9	14	16	11	F. E. Whittemore.
Grand Saline	Van Zandt	670	20	72.6	+ 0.2	95	10	48	14	36	4.32	- 0.33	1.53	0.0	6	8	13	10	W. J. Crowley.
Grapevine	Tarrant	550	10	70.4	- 0.8	95	29	49	8	38	2.40	- 3.47	1.15	0.0	7	9	9	22	J. P. Regan.
Greenville	Hunt	235	19	74.2	- 2.6	92	31	53	25	31	5.49	+ 1.65	1.53	0.0	9	12	9	10	Dr. J. E. Lay.
Hallettsville	Lavaca	400	22	72.3															

TABLE 1.—Climatological data for May, 1910. District No. 8—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	
Texas—Cont'd.																				
Marble Falls.....	Burnet.....	771	2								2.81		1.00	0.0	9	15	4	12	sw.	Wm. Harrison.
Marfa.....	Presidio.....		2								1.00		0.50	0.0	3					R. K. Colquitt.
Marshall.....	Harrison.....	375	1	71.0		91	30	46	9	40	4.55		1.73	0.0	8	0	23	6	sw.	Lee Scott.
Mexia.....	Limestone.....	537	6	70.2		91	9	50	8	37	5.61		1.68	0.0	11	7	13	9	sw.	Miss Josephine Newman.
Midland.....	Midland.....		3			100	29†				0.60		0.50	0.0	2	18	11	2		H. J. Elder.
Mont Belvieu.....	Chambers.....	65									5.22		1.56	0.0	8	14	12	5	n.	A. R. Shearer.
Mt. Blanco.....	Crosby.....	2,750	22	65.2		93	1	40	3	40	2.39	+ 0.28	0.98	0.0	6	15	3	13	n.	H. C. Smith.
Nacogdoches.....	Nacogdoches.....	271	11	70.4	- 2.4	88	30	50	8†	36	8.52	+ 3.28	1.93	0.0	7	10	9	12	n.	Miss Mary Hofmann.
New Braunfels.....	Comal.....	720	21	72.8	- 1.8	93	31	53	24	28	2.71	- 0.51	1.00	0.0	7	8	15	8	ne.	J. Giesecke.
Palestine.....	Anderson.....	510	28	70.7	- 1.8	88	30	52	14	30	5.75	+ 0.86	2.78	0.0	10	11	13	7	n.	U. S. Weather Bureau.
Panther.....	Hood.....	1,000	20								4.30	+ 0.50	1.95	0.0	7				n.	E. H. Snider.
Pearshall.....	Frio.....	629									2.86		1.50	0.0	4				n.	H. E. Walker.
Pierce.....	Wharton.....	102	4	69.6		87	11	52	9	27	9.77		6.20	0.0	9	8	13	10	n.	R. B. Pointer.
Plainview.....	Hale.....	3,370	2	64.5*		98*	29	39*	3	44*	1.93		0.76	0.0	7	18*	5*	7*	se.	J. F. Sander.
Port Lavaca.....	Calhoun.....	20	9	77.1		97	31	59	24	32	7.78		4.46	0.0	5	13	17	1	n.	J. H. Bickford.
Ricardo.....	Nueces.....	57	1	77.8		95	1	57	25	30	1.37		0.87	0.0	4	14	16	1	sw.	Lindsay Waters.
Riverside.....	Walker.....	169	6								4.01		1.20	0.0	6	15	3	13	n.	Mrs. C. W. Higdon.
Robert Lee.....	Coke.....	1,850	2	72.3		99	11	47	3	39	1.00		0.43	0.0	5	17	5	9	sw.	H. D. Pearce.
Rockland.....	Tyler.....	136	6								4.68		2.00	0.0	4	12	1	18	n.	D. W. Bellamy.
Roseville.....	Atascosa.....	553	3	75.7		98	17	55	24	38	2.23		1.12	0.0	6	5	22	4	se.	W. F. M. Ross.
Runge.....	Karnes.....	308	15								10.70	+ 7.02	5.85	0.0	6				n.	Reiffert & Froese.
Sabinal.....	Uvalde.....	964	6	76.4		94	9†	54	23†	35	3.63		2.93	0.0	6	7	6	18	e.	Jas. Johnson.
San Angelo.....	Tom Green.....	1,847	2	73.6		98	11	49	24	29	0.82		0.68	0.0	3	12	14	5	n.	Sam Crowther.
San Antonio.....	Bexar.....	701	25	74.7	- 0.1	96	31	55	24	29	1.56	- 1.40	0.81	0.0	7	6	18	7	se.	U. S. Weather Bureau.
San Augustine.....	San Augustine.....	360	1								8.82		2.58	0.0	9	14	8	9	n.	F. A. Wilson.
San Juanito.....	Hidalgo.....	1		82.0		100	9	62	5†	35	8.10		7.08	0.0	2	7	7	17	se.	J. B. McAllen.
San Marcos.....	Hays.....	588	17	72.6	- 1.7	90	2	54	24	30	2.80	- 1.30	0.80	0.0	6	11	0	20	n.	Miss L. C. Ford.
San Saba.....	San Saba.....	1,712	6	72.4		93	9†	47	24	37	4.85		2.43	0.0	5	17	11	3	n.	Jas. Burns.
Santa Gertrudes.....	Nueces.....		8																n.	J. B. Wright jr.
Seymour.....	Baylor.....	1,180	4	69.2		98	10	44	3	39	6.75		3.32	0.0	11	16	7	8	n.	F. M. Deaver.
Somerville.....	Burleson.....	251	1																n.	W. A. Dolan.
Sonora.....	Sutton.....	2,300	7																n.	Mike Murphy.
Sugarland.....	Fort Bend.....	79	12	71.8*	- 3.8	93*	9	41	12	48*	5.25	+ 0.74	1.95	0.0	5	19	7	5	n.	O. M. Bakke.
Taylor.....	Williamson.....	583	9	72.6	- 1.7	92	31	55	23	29	2.74	- 1.37	1.16	0.0	8	15	10	6	n.	U. S. Weather Bureau.
Temple.....	Bell.....	630	16	73.0	- 0.1	95	9†	53	23	40	8.17	+ 4.11	3.70	0.0	9	10	13	8	n.	H. D. Patterson.
Tilden.....	McMullen.....		4																n.	Wm. Kuykendall.
Tivoli.....	Refugio.....										5.63		2.00	0.0	5	7	16	8	n.	W. H. Giesler.
Uvalde.....	Uvalde.....	937	2	77.4		98	31	53	24	37	2.04		1.54	0.0	5	10	21	0	e.	F. M. Getsendaner.
Valley Junction.....	Robertson.....	289	5								4.80		1.30	0.0	7	16	5	10	n.	T. M. Williams.
Victoria.....	Victoria.....	187	12	75.6	- 2.4	92	7†	58	24†	30	6.68	+ 3.00	1.70	0.0	7	16	2	13	n.	C. C. Zirjacks.
Waco.....	McLennan.....	424	21	72.6	- 2.7	94	2	56	8†	33	8.18	+ 3.12	2.00	0.0	7	16	1	14	n.	E. H. Hall.
Waxahachie.....	Ellis.....	556	14	70.2	- 3.2	94	16†	48	7†	45	7.75	+ 2.40	2.16	0.0	9	14	6	11	n.	C. D. Longserre.
Weatherford.....	Parker.....	864	21	70.6	- 1.1	96	11	48	14†	37	5.78	+ 1.90	1.88	0.0	6	17	3	11	n.	Miss J. Stickfort.
Wharton.....	Wharton.....	105	8	77.0		97	12†	55	25†	32	8.86		4.51	0.0	6	14	4	13	n.	Mrs. F. M. Hughes.
Wills Point.....	Van Zandt.....	524	5	69.8		91	11	49	8	34	3.79		1.40	0.0	5	13	4	14	n.	W. W. Gibbard.
Zapata.....	Zapata.....	300	1	83.7		107	22†	63	18†	34	1.07		0.86	0.0	2	21	7	3	se.	F. H. Earnest.

- * , * , etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
 † Precipitation included in that of the next measurement.
 ** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.
 † Also on other dates.
 † Separate dates of falls not recorded.
 † Data are from standard instruments not supplied by the U. S. Weather Bureau.
 † Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.
 † Estimated by observer.
 † Precipitation for the 24 hours ending on the morning when it is measured.
 † Precipitation is less than 0.01 inch rain or melted snow.

MONTHLY WEATHER REVIEW.

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TABLE 2.—Daily precipitation for May, 1910. District No. 8, Texas and Rio Grande Valley.

[illegible]

TABLE 2.—Daily precipitation for May, 1910. District No. 8—Continued.

Stations.	River basins.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Texas—Cont'd.																																		
Bay City	Colorado							T									T			.29			.90	1.95							.45	3.59		
Beaumont	Neches							T												.37			.91	1.05	1.85	2.61				.74	.06	T	7.59	
Beeville	Coast							.52									T	T	T	.22			1.61	.00	.22	1.39					.56	4.07		
Big Springs	Colorado																			.05			.45	.08								0.69		
Blanco	Guadalupe																			1.05			1.31	.09	.14							T	2.64	
Boerne	San Antonio							.02												1.50			.25	.13	T							1.91		
Booth	Brasos							.06												.04			1.00	.53	1.35	2.50					.95	.65	.25	7.37
Bowie	Trinity							.58	.28											.38			.04	.84	.17	.07							3.89	
Brazoria	Brasos							.07	T			.01								.02			.83	1.25	.20						.25	1.10	3.77	
Brazos	do																			1.36			.17	.90	.18								5.57	
Brenham	do							.03	.25											.11			.05	.72	.35	.83	.69						T	5.03
Bridgeport	Trinity																			.12			.80	.48	.02	.20	.20	.15					3.59	
Brighton	Coast							.03												.25			1.16	1.31	.63						.13		3.51	
Brownsville	Rio Grande																			.01													1.41	
Brownwood	Colorado																			.05			.28	1.95	.27								2.57	
Cameron	Brasos							T												.21			.33	T	.73	.29	1.11	.01	.10			.02	.07	5.29
Carmona	Neches																			.20			.01	.80	.10	1.00							2.18	
Claytonville	Brasos																			.78			.10	.27	.06	.05	.61	.08	T				1.70	
Coleman	Colorado																			.55			.13										5.58	
College Station	Brasos																			.36			.17		1.20	2.50	.55					.81	1.40	
Colorado	Colorado																			.36			1.20	.92	.80	.52							3.80	
Columbia	Brasos																			.62			.65	.50	.16	.29	.02						5.23	
Columbus	Colorado																			T			T										1.40	
Cumstock	Rio Grande																			.54			.46	.46	.38	T							5.23	
Corpus Christi	Coast																			.62			.65	.50	.16	.29	.02						3.80	
Corsicana	Trinity																			.72			.50	1.75	.80	.21							8.11	
Crockett	do																																T	2.23
Cuero	Guadalupe																			.96			.17	.50	.10	.06	.04						2.41	
Dallas	Trinity																			.40			4.00										4.35	
Danevang	Coast																			.35			.18	.41	.70	.43	.45	.55					3.44	
Ducatur	Trinity																			.73			.05										1.30	
Del Rio	Rio Grande																			.70													1.18	
Devine	Nueces																			.38			.05										0.52	
Dialville	Neches																			.15													5.76	
Dilley	Nueces																			.01			.45	T									2.12	
Dublin	Brasos																			.17			.01	.08									1.74	
Duval	Colorado																																3.10	
Eagle Pass	Rio Grande																			.40													4.50	
Edna	Lavaca																			.90			.40	.30		.10	.80						3.69	
El Paso	Rio Grande																			.37			.32	.15	.36	.05	.13	.02					4.68	
Encinal	Nueces																			.27			.83	1.05	.97	.40	1.07						3.60	
Fairland	Colorado																			.45			.48	.03	T								3.74	
Falfurrias	Coast																			.105				.13		.10	.06						4.32	
Flatonia	Guadalupe																			.41			T	.07	.33	T	1.36	T	.13	.05	.08		2.40	
Flint	Neches																			.82			T	.46									5.49	
Fort Clark	Rio Grande																			.10			.15										2.82	
Fort McIntosh	do																			.20			.50	T	1.50								3.00	
Fort Stockton	Pecos																			.85			1.15	1.10									2.50	
Fort Worth	Trinity																			.78			.100	T									4.01	
Fredricksburg	Colorado																			.30			.24	.46		.05	.50						6.52	
Gainesville	Trinity																			.30			.24	.46		.05	.50						6.22	
Galveston	Coast																			.28			2.85										5.79	
Gatesville	Brasos																			.90			.40	.30		.10	.80						1.78	
Georgetown	do																			.107			.33	T	1.36	T	.13	.05	.08				7.21	
Gonzales	Guadalupe																			.41			T	.07	.33	T	1.36	T	.13	.05	.08		4.32	
Graham	Sabine																			.10			.15										2.40	
Grand Saline	Trinity																			.82			T	.46									5.49	
Grapevine	Sabine																			.57			.33	1.07	.73	.22							2.82	
Greenville	Lavaca																			.20			.50	T	1.50								3.00	
Hallettsville	Colorado																			.58			.57	.23	.22	1.53							2.82	
Harper	Brasos																			.20			.50	T										

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TABLE 2.—Daily precipitation for May, 1910. District No. 8—Continued.

Stations.	River basins.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Texas—Cont'd.																																		
Port Lavaca.....	Coast.....				14		T.												1.17	T.	1.03	4.46	.98							T.		7.78		
Ricardo.....	do.....						T.		T.										.87	.01	.25									.24		1.37		
Riverside[].....	Trinity.....						T.		.31									T.	1.20		.60	.85	.83	.20								4.01		
Robert Lee[].....	Colorado.....			13										.03	T.			.27	.14	.43												1.00		
Rockland[].....	Neches.....																		.47	.24	T.			1.00	1.97							4.68		
Romville.....	Nueces.....							.02										.10	.20	1.12												2.23		
Runge.....	San Antonio.....						.26																							T.	.30		27.10	
Sabinal.....	Nueces.....						.33											.02	.93	.04	.25									T.	.06		3.63	
San Angelo.....	Colorado.....											T.	.04					T.	.08	.10												10.70		
San Antonio.....	San Antonio.....						.05								T.			.08	.29	.30	.81	T.	T.							.08	T.	.05	8.82	
San Augustine.....	Neches.....							T.	.03							.16	T.	2.58		2.28	.32	.02	.28	.85							T.	.20	8.10	
San Juanito.....	Coast.....																		7.08													1.02		
San Marcos[].....	Guadalupe.....																		.70	.13	.53	.30	.30	.80								2.80		
San Saba.....	Colorado.....						T.	.09										2.43	19.2	.21			.02									4.85		
Santa Gertrude[].....	Coast.....																																	
Seymour.....	Brasos.....			.50	.03	.01									.80	.80	T.	.03		.75				.48	.01				T.	3.32		T.	.02	6.75
Somerville.....	do.....																																	
Sonora.....	Rio Grande.....							T.											.20	1.30	.70		1.10	1.95									5.25	
Sugarland.....	Brasos.....																		.04	.79	.03	.03	.55										2.74	
Taylor.....	do.....		T.				T.	.13						.01		T.		1.16	.04															8.17
Temple[].....	Brasos.....						.05	.06									.08	3.70	.60	.35	.46			.72	.15									
Tilden.....	Nueces.....																																	
Tivoli.....	Guadalupe.....																		1.90		1.23	.00	.25							.25			5.63	
Uvalde.....	Nueces.....					.03							T.						.33	.54		.10									.04		2.04	
Valley Junction[].....	Brasos.....						.30											.80	.30	10	1.30		1.00	1.00									4.80	
Victoria[].....	Guadalupe.....						1.70											.52	1.20	78	1.50	.15								.83			6.68	
Waco[].....	Brasos.....						T.	1.32								.34		1.38	.22	1.32	1.60		3.00										8.18	
Waxahachie[].....	Trinity.....			T.					.35						1.80	1.07	T.	2.16	.27	.65			.73	.54	.18								7.75	
Weatherford[].....	do.....						T.	T.							1.67	.69	T.	1.88	T.	1.30	T.		.21		.03								5.78	
Wharton[].....	Colorado.....				T.	T.													1.60	4.51		.87	.80	.88						T.	.20		8.86	
Wills Point.....	Sabine.....			T.	T.	T.	T.								T.	T.		1.40	T.		.93		.48	.22									3.79	
Zapata.....	Rio Grande.....							.86											.21														1.07	

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 8, Texas and Rio Grande Valley.

Date.	Colorado.				New Mexico.																Texas.							
	Garnett.		San Luis.		Agricultural College.		Carlsbad.		Fort Stanton.		Mountainair.		Rosendale.		Rowell.		Santa Fe.		Santa Rosa.		Abilene.		Big Springs.		Brownsville.		Corpus Christi.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	66	35	64	31	81	50	93	48	78	49	80	31	74	52	89	45	69	36	84	52	92	65	100	65	84	68	77	71
2...	64	29	62	34	83	50	86	59	74	45	76	38	72	42	80	49	65	35	78	48	80	62	86	65	86	70	79	72
3...	68	29	65	31	74	61	84	39	65	35	67	35	65	45	61	46	57	41	61	40	62	45	66	45	86	70	78	73
4...	70	34	65	30	82	57	64	40	68	40	67	39	70	40	54	46	64	38	59	43	76	51	77	47	85	68	77	73
5...	60	32	66	29	86	64	83	43	78	46	76	45	73	45	88	52	65	40	81	50	78	59	81	48	85	61	78	70
6...	63	25	61	23	86	43	88	48	78	36	72	46	74	38	86	46	66	35	82	45	90	64	93	60	87	66	79	72
7...	68	29	68	25	87	53	88	50	79	38	75	35	77	44	78	47	68	34	80	39	76	52	83	50	87	71	81	61
8...	72	32	73	27	88	53	90	54	81	37	80	40	76	44	86	47	72	40	96	45	87	53	91	55	94	72	79	70
9...	77	36	78	33	91	52	95	53	86	39	87	44	82	46	92	47	76	47	91	45	93	60	98	55	89	63	80	70
10...	77	37	73	35	92	53	101	55	84	41	85	48	79	57	94	54	75	46	89	49	94	67	94	66	90	66	81	70
11...	77	34	77	32	92	50	98	56	83	56	81	50	79	53	88	58	78	48	85	62	97	66	105	60	88	67	84	70
12...	71	33	74	34	87	60	98	58	79	38	75	44	79	48	78	54	66	43	78	49	79	59	80	57	90	72	81	73
13...	59	41	66	44	90	59	87	55	74	39	72	38	64	37	74	53	58	40	78	49	66	56	69	53	87	63	84	70
14...	58	34	60	29	88	64	86	50	77	36	79	40	72	48	86	56	65	38	84	49	82	60	88	58	88	75	82	76
15...	68	32	65	32	88	55	95	60	84	41	80	40	77	46	89	54	71	39	86	49	83	66	95	57	86	74	81	76
16...	58	33	59	35	86	53	94	58	81	39	76	49	74	53	89	54	63	43	83	47	88	69	99	66	88	76	81	77
17...	64	22	65	25	78	60	93	54	71	41	65	42	64	46	72	51	58	37	61	43	70	52	78	50	88	75	82	77
18...	64	42	61	38	82	53	75	54	74	39	72	38	64	37	74	53	58	40	78	49	66	56	69	53	87	76	80	66
19...	70	27	70	28	85	50	90	57	77	36	79	40	72	48	86	56	65	38	84	49	82	60	88	58	88	75	82	76
20...	70	30	65	35	83	55	89	58	75	39	77	39	70	44	84	59	67	41	83	55	93	66	94	65	89	76	84	64
21...	53	33	56	33	81	55	90	65	72	41	70	38	69	44	83	56	60	35	76	50	93	67	92	64	89	72	81	65
22...	61	29	59	30	76	53	87	46	63	38	62	31	67	38	66	48	59	34	62	40	99	52	84	54	91	74	80	70
23...	69	32	65	31	82	46	85	41	72	32	74	30	71	38	78	38	68	36	80	39	71	49	78	46	85	72	80	67
24...	72	36	71	33	87	48	95	48	82	35	84	41	79	46	91	43	74	44	91	40	84	50	90	49	91	58	84	63
25...	71	34	68	33	90	46	98	58	80	52	84	41	76	60	91	57	72	43	88	52	94	62	101	52	91	62	80	65
26...	77	37	70	32	90	53	98	67	85	44	83	49	81	54	92	61	74	48	91	60	95	66	92	71	87	66	80	69
27...	77	34	75	34	95	57	97	57	81	51	85	55	83	53	87	61	77	47	87	55	87	68	88	67	86	65	80	71
28...	83	38	81	38	99	65	95	60	94	47	88	52	89	55	93	60	84	55	97	53	89	68	95	62	80	65	80	75
29...	84	38	83	40	99	67	96	60	84	47	92	53	87	62	91	57	81	55	99	50	90	65	92	62	89	65	79	70
30...	84	38	85	45	94	66	95	57	89	50	87	56	87	56	92	58	84	57	98	57	92	63	98	62	89	66	82	72
31...	83	39	81	39	95	64	98	64	83	47	89	58	84	55	91	60	79	57	94	60	90	68	99	66	92	70	88	72
Mns	69.6	33.4	68.7	32.8	87.0	55.3	90.7	53.9	78.6	42.2	78.6	43.0	75.9	48.3	83.1	52.2	69.5	42.8	82.0	49.1	83.2	59.5	88.7	57.6	87.8	68.7	80.7	70.5

Texas.																												
Date.	Del Rio.		El Paso.		Fort McIntosh.		Fort Stockton.		Fort Worth.		Galveston.		Hallettsville.		Houston.		Lufkin.		Palestine.		Pineview.		San Antonio.		Seymour.		Taylor.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	87	66	86	61	95	70	99	55	87	67	75	69	82	65	82	65	84	63	83	65	91	53	86	66	96	66	84	66
2...	90	67	85	60	101	75	92	52	88	61	76	70	82	71	84	68	87	63	86	67	87	47	91	67	80	65	90	67
3...	85	65	71	53	98	70	83	49	66	54	77	71	82	67	85	65	84	65	78	62	60	39	84	66	66	44	81	62
4...	86	68	85	53	93	70	80	48	73	56	76	67	83	67	84	64	84	63	80	61	54	43	84	64	61	50	84	59
5...	84	68	86	60	93	70	77	60	80	58	76	69	79	64	85	64	83	61	80	58	72	53	84	64	75	57	81	61
6...	89	66	85	58	96	70	93	55	86	66	77	70	81	65	84	64	83	63	80	65	78	53	87	67	87	59	85	67
7...	89	65	86	56	99	70	88	49	75	54	79	72	71	67	87	69	83	63	75	59	75	45	82	66	75	49	77	64
8...	88	67	88	62	93	70	90	63	79	51	76	68	80	63	83	61	85	53	77	53	90	50	84	60	85	47	81	55
9...	93	66	91	63	98	70	97	58	90	59	77	70	84	61	87	60	88	53	86	56	91	52	89	65	94	57	88	59
10...	93	65	92	63	96	70	101	60	93	66	78	72	83	67	86	62	89	59	86	63	93	55	88	68	98	59	88	64
11...	95	66	91	65	99	70	102	68	92	65	78	72	84	63	87	63	89	60	84	65	83	58	90	69	94	71	90	67
12...	94	68	84	62	100	72	89	59	78	61	81	73	85	67	88	66	86	66	82	64	89	68	89	68	79	57	84	67
13...	89	71	92	64	95	72	93	65	61	54	78	72	82	69	84	65	88	55	70	55	66	46	87	67	63	51	76	57
14...	89	70	89	64	96	72	97	59	58	48	77	70	76	65	77	63	68	54	61	52	56	46	85	65	66	50	79	56
15...	91	69	85	63	103	72	89	61	76	56	79	72	87	70	82	69	88	54	79	57	79	48	80	69	77	58	87	68
16...	90	74	87	67	99	75	100	51	85	64	80	74	87	75	85	72	88	70	85	66	72	50	88	74	85	69	92	73
17...																												

Climatological Data for May, 1910.
DISTRICT No. 9, COLORADO VALLEY,

FREDERICK H. BRANDENBURG, District Editor.

GENERAL SUMMARY.

The weather conditions during May were unsettled. The storms were generally well defined and energetic in movement, but the precipitation was light in the central and southern parts of the district, even for May, and unusually light in the upper part of the drainage area. Temperature changes were frequently abrupt; cold weather for the time of the year, with frosts and freezing temperature in parts of northern Arizona, northern New Mexico, Utah, Colorado, and Wyoming, was quickly followed throughout the district by unusually high temperatures, in some localities, the highest of record. As a result of the prolonged drouthy conditions grass remained short on the ranges in southwestern Wyoming. In Utah dry farm wheat was suffering at the close of the month.

TEMPERATURE.

The mean of the 127 stations reporting was 62.9°, or 2.4° above the normal. An excess was general, except over small areas in southeastern Arizona and northwestern Colorado. By subdivisions the means and departures were: Western Wyoming, 44.1°, +4.5°; western Colorado, 50.6°, +1.3°; eastern Utah, 58.7°, +2.2°; western New Mexico, 63.0°, +2.3°; Arizona, 72.5°, +2.6°. The highest monthly mean was 83.8°, at Sentinel, Ariz., and the lowest, 31.0°, at Corona, Colo., on the Continental Divide. Temperatures fluctuated considerably during the first 6 days, but on the whole the weather was cooler than the normal, with marked deficiencies general on the 6th, on which date damaging frosts were reported in Utah. From the 7th to the 14th high mean temperatures were noted, but from the 15th to 23d the weather was again cold in the northern half of the district, and in northern Arizona, with frosts on the 16th, 17th, 18th, and 22d in the agricultural regions of the central and northern parts of the district, considerable damage being done to fruit at higher stations on the 17th. From the 27th to the close of the month very high temperatures prevailed throughout the entire district. It may be of interest to note that the distribution of pressure during the extraordinarily hot period of the closing days of the month occurred with pressure above the normal and a moderate gradient from the north toward the Gulf of California. The insolation during this period was unusually strong, and, although the nights were also free from clouds, the direction of the wind was unfavorable to the usual cooling at night. The highest local maximum, 121°, was noted at Gilabend, Ariz., on the 29th, and at Quartzsite, Ariz., on the 30th. At Yuma, Ariz., 120° was noted on the 30th.

PRECIPITATION.

The precipitation during the month was about one-half of the normal, the mean of 172 stations being 0.38, and the deficiency 0.35 inch. Of the stations with normals, only 5 reported an excess, and that very slight. In eastern Utah, northwestern New Mexico, and the greater part of Arizona, the month was without rain. By watersheds the means and departures were: Green, 0.97, -0.38 inch; Grand, 0.97, -0.64; San Juan, 0.31, -0.85; Mimbres, 0.20, -0.08; Little Colorado, 0.04, -0.56; Gila, 0.05, -0.20, and Colorado proper, 0.01, -0.28 inch. The greatest monthly amount was 5.27 inches at Corona, Colo., while in New Mexico and Arizona 42 stations reported no precipitation, and 30 only a trace.

On the 2d snow fell at a few of the higher stations in Colorado, and again on the 6th. A heavy fall for the time of year occurred on the 16th in the mountains of Colorado, Wyoming, and eastern Utah, a number of stations reporting 6 inches or more. During the storm of the 21st, which was general in the higher elevations in Colorado, the average snowfall was 4 inches. In Wyoming

the greatest monthly amount reported was 16 inches; in Colorado, 48.6 inches; and in Utah, 7.5 inches.

RIVERS.

The volume discharged by the principal tributaries of the Colorado and the maximum stages reached varied but slightly from those for May, 1909. In the trunk stream the volume discharged was appreciably smaller than a year ago, with the maximum stages at Grand Canyon and Yuma about 3.0 feet lower.

MISCELLANEOUS.

The percentage of sunshine was much above the average in the northern part of the district. Grand Junction and Durango reported 88, Flagstaff 92, Phoenix 93, and Yuma 96 per cent of the possible.

The mean monthly relative humidity observed ranged from 40 per cent at Durango to 32 per cent at Phoenix.

COMPLETE PROVING OF THE ROOSEVELT DAM.

By L. N. JERUNOFFSKY, Section Director, Phoenix, Ariz.

The farmers in the Salt River Valley are congratulating themselves and thanking the Government for the Roosevelt Dam. This gigantic project has proven itself, beyond all question, the most successful in the history of Arizona, for the residents of the Salt River Valley are now passing through severe conditions of drought of 7 weeks' duration, fully as acute as during the spring months of 1900, 1901, 1902, 1903, and 1904. But for the stored water supply behind the large pile of masonry some 75 miles east of Phoenix—more than 155,000 acre-feet—the growing crops on every acre under the project would have been hopelessly lost several weeks ago. At the present height of the stored water supply—some 112 feet—water for irrigation purposes may be had for 100 days, or more, should not even a single light shower occur.

The fact is that the big dam has thoroughly proven its full usefulness. Formerly, on account of droughts, there were serious water shortages in the Salt River Valley, but now conditions are entirely different.

There were at the end of May 11, 683 miners' inches of water in the Salt River, which was the principal source of supply before the massive pile of concrete called the Roosevelt Dam was constructed. There are now in use each day 40,644 miners' inches, and none is allowed to flow that is not positively necessary. In other words, were it not for the dam only a little more than 25 per cent of the water needed could be supplied, and that would mean ruin to every farmer whose land is under the project.

Were Salt River Valley to-day depending upon the water under the old system, only 4,915 inches would be given to the land lying on the north side of the river, whereas, there are now given 26,890 inches. All of this is absolutely required to keep alive the orchards, grain, and grasses, which need water constantly for sustenance. It would also mean ruin to the farmers located on the south side of the river as well, for there would be only 6,764 inches to supply the needs of that side, whereas they are now receiving a full and bountiful supply.

These figures are of great import to the farmer, and of great importance as illustrating the full usefulness of the Roosevelt Dam to the whole southwest, for much of the products raised in the Salt River Valley finds ready sale in far distant markets.

The above figures mean that 52,000 acres, every foot of which is now in the highest possible state of cultivation, would have been, to date, some 5 weeks with no water for irrigation, stock, or domestic use, while another 31,000 acres, completing

the 83,000 acres lying north of the Maricopa Canal, could be given only 1 miner's inch to each 6 acres. An amount that would have had as much effect in raising a crop as dumping a bucket of water into the ocean would have of raising a tidal wave.

With the rainfall for the year 1901, given by the Weather Bureau as being only 4.87 inches, the year 1910, up to June 1, shows a fall of 1.40 inch only, much less than the amounts that fell in the spring of 1900 or 1901. The drainage area above the Roosevelt Dam is tremendous, but a moderate rain falling over its entire area would hardly make an appreciable difference in the run-off, owing to the extremely rapid evaporation.

STORED WATER.

There was at the end of May, 1910, 166,000 acre-feet of water and there is being taken out each day 1,456 acre-feet. Allowing a matter of 10,000 acre-feet for shrinkage from evaporation, the Reclamation engineers state that this supply will last at least until September 15 next. It is because of this fact that the Salt River Valley farmer reckons that his crops are safe. Granted that no precipitation occurs during the remainder of the season, his crop is assured by the mass of water in the reservoir, and the summer rains are sure to come, so that planting in the fall will be an easy matter.

Rain is to be expected in July, of course, but the amounts may be too small for practical utility. There have been periods when it has not rained during that month in what may be

termed commercial quantities, and it is for this reason that Engineer Reed, United States Reclamation Service, desires an economical use of the present water supply.

Another surprising figure is contained in portion of the Reclamation records devoted to Mesa. That district would now be receiving 732 inches under the old system, scarcely enough even to wet but a few acres, and everything living in the way of vegetation would have been dried up several weeks ago. Under the present conditions, 6,800 miners' inches are flowing their way into the land and the whole district is full of vegetation.

The water is now flowing continually in the canals. Last year when but 4 hours of water per day was given to a quarter section, with the dam far from completion, at the present time water is flowing over every quarter section for each of the 24 hours, as needed. This despite the fact that conditions of drought prevail in the rivers. Thus has the Roosevelt Dam, still 1 per cent incomplete, proven its thorough usefulness. There can now be no failure of crops in the Salt River Valley.

Intelligent conservation, however, is necessary; not stinginess with water, nor stunting of crops as a choice of the lesser of two evils, but a careful, wise use of the water that there may continue to be plenty. The Government has worked out the theories and has proven them by facts in the present instance. It now relies upon the farmer to irrigate according to the rules as laid down, and the present prospects for record-breaking crops and for good planting next fall will be realized.

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 1.—Climatological data for May, 1910. District No. 9, Colorado Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, all inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.	
Wyoming.																					
Daniel	Uinta	6,740	11	47.1	+ 4.5	79	31	19	17	48	0.75	- 0.57	0.45	3.0	2	12	18	1	nw.	J. M. Van Dervort.	
Dixon	Carbon	6,577	2	48.6		85	31	16	17	53	0.07		0.05	0.0	2	13	9	9	w.	Chas. Spillman.	
Eden	Sweetwater	6,083	5																	Eden Valley L. and I. Co.	
Green River	do	7,630																		Geo. H. Maxon.	
Kendall	Fremont	7,167	4	46.6		79	31	22	1	47	0.50		0.20	3.0	3	21	9	1	nw.	Art. Doyle.	
Pinedale	do	7,167	4	46.6		79	31	22	1	47	0.50		0.20	3.0	3	21	9	1	nw.	U. S. Forest Service.	
Rambler	Carbon	9,232									1.93		0.68	16.0	6	10	11	13	w.	J. C. Forbergill.	
Colorado.																					
Ashcroft	Pitkin	9,483	8	43.3		76	31	13	17	43	1.28		0.32	0.0	11		5			Dan McArthur.	
Breckenridge	Summit	9,536	20	40.0	+ 1.0	71	31	6	17	44	1.04	- 1.22	0.41	5.5	6	2	24	5	nw.	Mrs. J. G. Thompson.	
Cascade	San Juan	8,900	4										0.07	0.5	4	20	4	7	e.	San Juan P. & W. Co.	
Chromo	Archuleta	7,500	4										0.29	0.0	2	14	16	1	sw.	Lawrence Nolan.	
Cochetopa	Saguache	9,088											0.85	0.37	2.0	8	10	15	6	w.	Bessie McDonough.
Collbran	Mesa	6,000	17	54.6		84	31	28	16	38	0.82	- 0.70	0.38	4.5	6	17	12	2	sw.	A. A. Wood.	
Columbine	Routt	8,766											0.93	29.0	9				sw.	Mrs. M. A. Caron.	
Columbine Ranch	Delta	9,925											0.23	2.0	5	20	6	5	sw.	Geo. W. Wade.	
Corona	Grand	11,660	3	31.0		87	31	10	21	27	5.27		1.11	48.6	16				w.	U. S. Weather Bureau.	
Crawford (near)	Montrose	8,600				76	31	25	17	38	0.89		0.30	1.0	8	19	9	3	sw.	C. W. Roe.	
Crested Butte	Gunnison	8,867				73	31	14	17	48	1.09		0.46	0.0	5	15	10	6	w.	Charles L. Ross.	
De Beque	Mesa	4,935				95	31	34	16	47	0.33		0.14	0.0	4	25	0	6	e.	C. M. Payne.	
Dillon	Delta	4,965	19	60.4	+ 1.5	96	31	26	17	52	0.17	- 0.52	0.08	0.0	3	17	6	8	e.	E. M. Gette.	
Dolores	Summit	8,800	1	47.7		82	27	28	8	24	0.31		0.28	4.8	3	15	10	6	n.	Harry T. Hamilton.	
Durango	Montezuma	6,500	1	53.5		81	25	28	16	44	0.15		0.15	0.0	1	18	8	5	ne.	Geo. R. Simmona, jr.	
Eagle	La Plata	6,534	17	55.6	+ 2.5	89	30	27	17	43	0.09	- 1.07	0.04	T.	4	11	17	3	nw.	U. S. Weather Bureau.	
Eureka	Eagle	6,598	5																	J. M. Witteman.	
Eureka	San Juan	10,000	3										0.80	0.35	1.0	5			sw.	San Juan P. & W. Co.	
Fruita	Grand			39.5		71	31	7	17	47	1.80		0.60	18.3	5	11	4	16	w.	L. D. C. Gaskill.	
Gladstone	Mesa	4,510	11	61.9	+ 3.4																

TABLE 1.—Climatological data for May, 1910. District No. 9—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		
Utah—Cont'd.																			
Vernal	Uinta	5,050	15	56.4	- 0.4	93	31	25	16	46	0.01	- 1.11	0.01	0.0	1	25	3	3	Joab Collier.
New Mexico.																			
Alma	Socorro	5,500	11	65.6	+ 3.5	105	29	31	6	57	0.30	- 0.04	0.16	0.0	3	7	21	3	M. A. Balke.
Aragon	do	5,856	3	54.2		94	29†	20	6	57	0.55		0.40	0.0	2	16	13	2	John R. Milligan.
Blackrock	McKinley	6,500	2	58.5		91	29†	30	6	48	T.		T.	0.0	0	12	17	2	Wm. J. Oliver.
Bloomfield	San Juan	5,500	15	60.3	+ 2.3	100	30	26	6	58	T.	- 0.54	T.	0.0	0	8	22	1	Fred Le Clerc.
Cambray	Luna	4,215	11								0.00	- 0.12	0.00	0.0	0	12	19	0	Southern Pacific Co.
Columbus	do	4,054				99	28				0.00		0.00	0.0	0	23	3	5	El Paso & Southwest. R. R.
Deming	do	4,333	33	70.3		100	29†	42	2	46	0.00	- 0.18	0.00	0.0	0	7	15	9	Southern Pacific Co.
Dulce	Rio Arriba	6,767	12	53.7	+ 2.6	91	29†	23	17	54	0.05	- 1.03	0.05	0.0	1	10	19	2	John M. Commons.
Fort Bayard	Grant	6,152	35	66.8	+ 5.0	93	30	33	1	49	0.32	+ 0.04	0.22	0.0	2	26	1	4	U. S. Gen'l. Hospital.
Fort Wingate	McKinley	6,997	46	59.9	+ 1.8	88	30	30	17	50	T.	- 0.58	T.	0.0	0	17	8	6	Post Hospital.
Fruitland	San Juan	4,800	17	61.0	+ 1.1	97	29†	27	17	54	0.00	- 0.34	0.00	0.0	0	21	8	2	Cyril James Collier.
Gage	Luna	4,486	3	69.6		95	27†	44	2†	47	0.14	+ 0.62	0.14	0.0	1	18	10	3	Southern Pacific Co.
Gila (near)	Grant	4,470	11	65.0	+ 0.9	95	9	30	23	57	0.15	- 0.04	0.15	0.0	1				Miss Cozella Clark.
Hachita	do	4,504									0.00		0.00	0.0	0	16	11	4	El Paso & Southwest. R. R.
Haynes	Rio Arriba	6,600									0.01		0.01	0.0	1	31	0	0	Dr. John Roger Haynes.
Hermanos	Luna	4,451									0.00		0.00	0.0	0	28	3	0	El Paso & Southwest. R. R.
Lordburg	Grant	4,245	10	70.7	+ 1.4	100	30	45	17	49	0.42	+ 0.20	0.42	0.0	1	20	9	2	Southern Pacific Co.
Luna (near)	Socorro	7,300	5																C. B. Martin.
Manuelito	McKinley	6,252	5								0.52		0.46	0.0	2	20	11	0	Mrs. H. F. Frick.
Mimbres	Grant	5,007	5								0.00		0.00	0.0	0	28	3	0	Chas. Dennis.
Pratt	do	4,415									0.00		0.00	0.0	0	29	2	0	El Paso & Southwest. R. R.
Putnam	San Juan	6,200																	Richard Wetherill.
Redrock	Grant	4,180	5								0.11		0.11	0.0	1	14	17	0	Robert N. Woods.
Rodeo	do	4,118									0.06		0.06	0.0	1				El Paso & Southwest. R. R.
Rosa	Rio Arriba	6,000	5																B. A. Candelaria.
Arizona.																			
Allaires Ranch	Cochise	4,184	14								0.00	- 0.15	0.00	0.0	0	28	1	2	Thos. Allaire.
Arizona Canal Dam	Maricopa	1,372	15	79.0	+ 4.2	115	30	49	5	44	0.02	- 0.14	0.02	0.0	1	19	9	3	U. S. Reclamation Service.
Astec	Yuma	492	12	76.2	- 4.4	120	30	38	5	68	0.00	- 0.05	0.00	0.0	0	28	2	1	Southern Pacific Co.
Benson	Cochise	3,523	28	72.6	- 2.3	106	29	43	5	48	T.	- 0.13	T.	0.0	0	10	12	9	Southern Pacific Co.
Bisbee	do	5,500	20	68.5	+ 2.5	95	29	44	20	32	T.	- 0.26	T.	0.0	0	22	7	2	Rev. J. G. Pritchard.
Bonita	Graham	4,916									0.00	- 0.26	0.00	0.0	0	27	0	4	A. Johnson & Co.
Bowie	Cochise	3,756	33	75.8	+ 4.6	106	29	48	2	44	0.00	- 0.24	0.00	0.0	0	27	1	3	Southern Pacific Co.
Buckeye	Maricopa	980	17	77.1	+ 4.6	113	29	48	27	52	0.00	- 0.07	0.00	0.0	0	31	0	0	H. E. Kell.
Canille	Santa Cruz	5,225	1								0.15		0.15	0.0	1	7	22	2	R. A. Rodgers.
Casa Grande	Pinal	1,396	28	79.8	+ 0.6	120	30†	48	27	52	0.00	- 0.05	0.00	0.0	0	20	9	2	Southern Pacific Co.
Cave Creek	Maricopa	1,523	3	75.4		114	29†	41	3	50	T.		T.	0.0	0	26	5	0	E. A. Howard.
Chin Lee	Apache	6,090	2	61.0		95	31	29	3	57	T.		T.	0.0	0	24	7	0	Fr. L. Ostermann, O. F. M.
Chlarsons Mill	Graham	8,000	3	58.6		86	29	28	5	48	0.39		0.39	0.0	1	15	15	1	H. R. Chlarsen.
Clifton	Graham	3,584	19	75.8		106	29	54	3	34	0.01	- 0.39	0.01	0.0	1	28	2	1	P. Reisinger.
Cline	Gila	2,300	10	73.0	+ 4.7	109	29	43	19	51	0.00	- 0.34	0.00	0.0	0	20	10	1	W. M. Clanton.
Cochise	Cochise	4,219	11	69.2	- 1.9	104	29	40	17	49	T.	- 0.23	T.	0.0	0	28	3	0	Southern Pacific Co.
Columbia	Yavapai	1,900	11	80.6		114	29†	50	5	38	T.		T.	0.0	0	23	8	0	M. J. Nolan.
Congress	do	3,688	14	76.6	+ 5.5	107	30	51	5	29	T.	- 0.11	T.	0.0	0	25	6	0	Congress Mine.
Courtland	Cochise	4,543	1								0.03		0.02	0.0	2	12	14	5	El Paso & Southwest. R. R.
Dos Cabezos	do	5,250	2	67.8		104	30	35	7	55	0.00		0.00	0.0	0	26	3	2	N. Erickson.
Douglas	do	3,930	7	72.0		106	29	34	23	50	0.02		0.02	0.0	1	25	5	1	Dr. F. T. Wright.
Dudleyville	Pinal	2,204									0.00		0.00	0.0	0	21	0	10	G. F. Cook.
Fairbank	Cochise	3,862	1								0.00		0.00	0.0	0	21	0	10	El Paso & Southwest. R. R.
Flagstaff (I)	Coconino	6,907	18	53.4	+ 2.7	88	31	22	5	47	0.03	- 1.18	0.03	0.0	1	18	10	3	U. S. Weather Bureau.
Florence	Pinal	1,504	11	79.8	+ 4.7	115	31	54	17	49	0.10	+ 0.05	0.10	0.0	1	19	1	11	Pacific & Eastern R. R.
Fort Apache	Navajo	5,200	39	62.5	+ 2.0	98	29	34	6	49	0.32	- 0.29	0.25	0.0	2	23	7	0	Post Hospital.
Fort Huachuca	Cochise	5,100	25	71.4	+ 4.1	104	29	41	20†	44	0.00	- 0.28	0.00	0.0	0	29	2	0	Post Hospital.
Fort Mohave	Mohave	6,004	39	83.6	+ 1.3	117	29†	44	5	47	0.00	- 0.12	0.00	0.0	0	25	6	0	A. F. Duclous.
Gilaband	Maricopa	737	19	83.1	+ 4.1	121	29†	51	5	48	0.00	- 0.04	0.00	0.0	0	15	16	0	Southern Pacific Co.
Globe	Gila	3,525	9	73.2		106	29	43	5	43	0.13	- 0.20	0.13	0.0	1	25	6	0	Dr. B. G. Fox.
Grand Canyon	Coconino	6,866	7																Grand Canyon Ry.
Greer	Apache	9,200	6								0.00		0.00	0.0	0	31	0	0	Mrs. M. Butler.
Hereford	Cochise	4,180	1								0.00		0.00	0.0	0	30	0	1	El Paso & Southwest. R. R.
Holbrook	Navajo	5,069	21	64.2	+ 3.4	101	29	29	5	59	0.00	- 0.28	0.00	0.0	0	30	0	1	T. Larson.
Intake	Gila	2,230	3																A. J. Robinson.
Jerome	Yavapai	4,743	13	71.0	+ 4.6	99	29†	43	5	31	0.00	- 0.56	0.00	0.0	0	22	9	0	Dr. L. A. Hawkins.
Keams Canyon	Navajo	6	6	58.6		91	31	25	7	44	T.		T.	0.0	0	16	15	0	L. R. Ballard.
Kingman	Mohave	3,326	8								0.06		0.06	0.0	1	16	14	1	J. R. Gooding.
Lewis Springs	Cochise	4,029	1								0.06		0.06	0.0	1	16	14	1	El Paso & Southwest. R. R.
Maricopa	Pinal	1,186	33	80.2	+ 0.3	116	30	49	5	44	T.	- 0.05	T.	0.0	0	16	15	0	Southern Pacific Co.
Mesa	Maricopa	1,244	14	81.0	+ 7.3	118	28	41	20	57	T.	- 0.06	T.	0.0	0	24	7	0	C. L. Diehl.
Mohawk Summit	Yuma	538	9	82.7	+ 0.8	120	30	50	4	51	0.00	- 0.04	0.00	0.0	0	25	6	0	Southern Pacific Co.
Naco	Cochise	4,579	1								0.00		0.00	0.0	0	23	7	1	El Paso & Southwest. R. R.
Natural Bridge	Gila	4,900	21								T.	- 0.54	T.	0.0	0	23	6	2	D. G. Goodfellow.
Nogales	Santa Cruz	3,830																	Wallace & Summerhayes.
Oracle	Pinal	4,500	18	76.0	+ 7.5	101	29	4											

TABLE 1.—Climatological data for May, 1910. District No. 9—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		Prevailing wind direction.
Arizona—Cont'd.																				
Thatcher.....	Graham.....	2,800	7	69.8	.....	107	29	40	21	51	0.10	.....	0.10	0.0	1	14	17	0	nw.	Prof. J. H. Larson.
Tombstone.....	Cochise.....	4,550	11	71.8	+ 4.0	99	29	47	20	37	0.00	- 0.25	0.00	0.0	0	23	7	1	.....	F. N. Walcott.
Truxton.....	Mohave.....	4,197	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. B. Atkinson.
Tuba.....	Coconino.....	4,500	12	63.2	+ 1.3	98	31	32	17	44	0.05	- 0.16	0.05	0.0	1	17	9	5	ne.	G. H. Kraus.
Tucson.....	Pima.....	2,390	30	75.3	+ 2.2	111	29	42	51	40	T.	- 0.14	T.	0.0	0	8	23	0	nw.	University of Arizona.
Vail.....	do.....	3,421	11	74.8	+ 0.5	108	29	40	5	50	T.	- 0.02	T.	0.0	0	16	15	0	w.	Southern Pacific Co.
Walnut Grove.....	Yavapai.....	3,649	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. O. Carter.
Wickenburg.....	Maricopa.....	2,072	.....	74.2	+ 4.6	114	31	40	5	52†	0.00	- 0.21	0.00	0.0	0	29	2	0	.....	Santa Fe, Presc't & Phoenix
Willcox.....	Cochise.....	4,164	28	66.8	- 2.7	104	30	40	61	48	0.00	- 0.23	0.00	0.0	0	19	0	12	s.	Southern Pacific Co.
Williams.....	Coconino.....	6,750	8	57.5	+ 3.4	92	30†	25	5	54	0.00	- 0.97	0.00	0.0	0	18	13	0	sw.	E. J. Nordyke.
Winslow.....	Navajo.....	4,853	5	67.6	.....	103	29†	30	5	55	T.	.....	T.	0.0	0	16	12	3	.....	J. F. Bauer.
Yarnell.....	Yavapai.....	4,700	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. L. Bartholomew.
Yuma.....	Yuma.....	141	29	78.8	+ 2.0	120	30	47	5	52	0.00	- 0.03	0.00	0.0	0	31	0	0	sw.	U. S. Weather Bureau.
Nevada.																				
Las Vegas.....	Clark.....	.....	.....	71.8	.....	114	30†	28	5	55	0.00	.....	0.00	0.0	0	.....	.....	.....	n.	Salt Lake Route.
Logan.....	do.....	.....	.....	75.0	.....	114	30	42	6	51	T.	.....	T.	0.0	0	9	16	6	s.	Ray M. Filcher.

*, †, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

* Precipitation included in that of the next measurement.

** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.

† Also on other dates.

‡ Separate dates of falls not recorded.

§ Data are from standard instruments not supplied by the U. S. Weather Bureau.

|| Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

||| Estimated by observer.

|||| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

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TABLE 2.—Daily precipitation for May, 1910. District No. 9, Colorado Valley.

[illegible]

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MAY, 1910

TABLE 2.—Daily precipitation for May, 1910. District No. 9—Continued.

[illegible]

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TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 9, Colorado Valley.

Date.	Wyoming.				Colorado.										Utah.										New Mexico.					
	Daniel.		Green River.		Durango.		Grand Junction.		Gunnison.		Meeker.		Steamboat Springs.		Emery.		Fort Duchesne.		Hite.		Moab.		St. George (Experiment station).		Fort Bayard.		Fort Wingate.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1...	60	22			59	37	56	46	59	33	50	32	44	32	76	45	56	42	73	55	68	53			82	33	78	42		
2...	62	21			65	38	63	38	65	29	54	34	53	33	65	28	63	32	77	49	73	37			86	38	78	39		
3...	64	23			69	40	77	45	60	32	69	34	66	27	66	32	74	36	85	53	83	40			84	40	78	43		
4...	69	22			69	39	79	48	69	28	72	36	70	31	62	31	75	37	79	54	83	55			82	45	74	41		
5...	50	30			59	31	64	38	70	31	63	29	66	32	68	32	61	35	74	49	72	40			80	42	61	39		
6...	62	28			70	33	69	44	72	32	59	32	48	32	65	32	72	35	79	49	75	40			78	42	60	38		
7...	63	30			68	35	75	45	70	30	67	31	60	37	62	35	79	33	83	50	83	40			80	47	70	36		
8...	69	30			76	37	79	48	74	39	71	32	69	29	66	38	81	37	87	50	86	43			85	48	75	40		
9...	78	29			79	40	84	48	75	40	76	34	75	30	69	38	84	38	88	50	93	42			87	50	80	41		
10...	66	44			77	43	86	60	70	30	78	45	74	38	75	40	84	53	81	59	90	57			87	52	80	56		
11...	68	31			80	40	81	52	76	35	71	33	68	31	72	41	81	35	91	63	87	50			88	55	80	44		
12...	69	27			76	41	84	54	74	42	74	37	69	29	65	40	81	39	95	58	89	46			87	56	81	41		
13...	71	37			76	47	78	59	72	43	60	38	66	29	68	45	79	46	91	59	90	65			86	58	83	54		
14...	65	33			72	40	76	53	67	41	69	33	65	32	68	47	79	37	85		89	48			85	60	84	49		
15...	45	24			69	33	73	39	70	42	58	27	52	28	61	36	64	39	86		80	45			86	61	83	54		
16...	52	25			64	33	53	34	62	26	44	27	40	27	62	35	58	33	66		64	41			88	64	84	34		
17...	63	19			66	27	70	36	60	29	62	18	64	17	65	31	69	28	77		75	32			82	65	60	30		
18...	69	25			69	37	76	38	59	34	67	27	67	24	72	31	79	30	84		82	37			79	60	65	32		
19...	64	27			71	34	79	42	57	28	65	28	69	24	76	33	80	32	88		86	36			78	60	70	45		
20...	69	28			68	34	68	50	64	27	64	33	57	30	75	35	74	41	81		74	40			76	61	67	52		
21...	73	27			58	38	60	44	72	24	52	35	49	32	73	31	66	33	80		74	44			74	61	62	44		
22...	76	23			68	31	73	36	69	20	64	24	61	21	75	33	75	30	84		79	37			77	60	62	34		
23...	74	23			73	35	82	46	70	26	73	30	71	30	83	40	81	37	89		89	41			76	40	72	35		
24...	70	22			78	40	84	54	70	27	75	38	71	36	75	40	84	44	95		93	40			77	45	77	42		
25...	68	24			73	41	80	61	72	22	76	37	72	33	72	36	80	42	86		90	53			66	46	74	54		
26...	65	25			76	37	79	47	77	28	68	43	65	35	75	42	80	36	92		88	46			81	41	77	47		
27...	68	27			83	41	86	54	78	38	79	33	79	27	72	41	89	39	97		95	45			90	43	84	49		
28...	67	29			86	43	88	54	74	28	76	39	74	40	75	43	85	45	98		97	48			91	59	86	54		
29...	76	32			89	46	93	57	78	25	80	36	79	40	75	46	89	44	102		96	51			90	53	87	51		
30...	77	30			89	46	92	59	75	27	83	40	82	30	75	46	93	40	103		92	50			93	47	88	50		
31...	79	32			84	48	93	59	80	23	84	34	83	32	76	49	95	43	104		102	48			72	52	87	49		
Means	66.8	27.4			72.9	38.2	78.8	48.0	69.7	30.9	67.8	33.2	65.5	30.3	70.3	37.8	77.1	37.8	86.6	56.2 ^a	84.5	44.8			82.4	51.1	76.0	43.8		

Date.	Arizona.																New Mexico.							
	Bisbee.		Flagstaff.		Fort Apache.		Grand Canyon.		Parker.		Phoenix.		Prescott.		St. Michaels.		San Carlos.		Tucson.		Yuma.		Logan, Nev.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	77	55	62	33	75	36			93	60	85	57	67	42	69	36	87	43	89	55	88	56	84	48
2	77	55	64	28	76	36			88	58	86	57	74	36	70	36	89	43	89	50	85	54	87	55
3	76	57	63	56	80	42			90	60	86	61	71	33	71	35	91	54	90	53	86	58	86	46
4	74	57	58	35	75	40			85	55	82	57	67	43	75	36	91	53	84	53	81	57	79	58
5	78	49	63	22	76	36			94	43	83	48	79	43	64	28	87	42	90	42	89	47	82	57
6	79	50	71	24	81	34			102	48	91	52	77	33	66	29	92	40	91	42	95	53	89	42
7	79	51	72	29	84	35			105	53	94	57	79	37	70	32	96	43	93	47	101	57	93	50
8	83	51	75	32	87	38			106	62	98	61	81	37	77	35	98	47	98	53	104	59	97	54
9	86	59	76	35	87	40			105	57	100	62	83	44	78	34	101	48	101	54	101	59	98	52
10	85	60	70	40	81	48			102	70	93	70	76	53	79	35	94	59	95	57	96	68	94	56
11	84	54	78	33	89	40			105	49	96	62	84	41	80	36	98	48	95	50	99	58	98	53
12	87	56	76	37	88	44			108	58	97	62	84	47	82	40	101	48	100	53	102	55	98	53
13	88	60	73	40	87	49			101	70	99	67	83	54			100	52	98	57	101	61	98	57
14	81	63	72	33	84	49			108	60	96	66	80	42			96	56	94	63	99	69	98	57
15	78	52	71	33	82	43			107	60	97	64	79	40			94	51	94	53	100	60	96	59
16	78	55	59	36	78	46			98	70	90	68	77	39			92	59	90	65	91	65	90	60
17	77	55	64	43	67	41			99	72	90	61	76	37			84	56	91	61	96	60	87	59
18	75	49	67	34	73	39			103	54	92	60	74	39			91	50	89	53	97	59	91	47
19	76	46	68	32	78	40			100	66	92	60	76	42			91	49	89	51	96	58	92	45
20	75	44	64	30	76	36			101	68	89	61	72	44			90	51	91	56	91	54	88	49
21	74	52	67	30	76	38			102	67	88	62	75	40	64	44	87	55	87	51	91	53	93	57
22	74	55	69	32	76	40			99	63	93	64												

Climatological Data for May, 1910.
DISTRICT No. 10, GREAT BASIN.

ALFRED H. THIESSEN, District Editor.

GENERAL CLIMATOLOGICAL CONDITIONS.

The weather throughout the Great Basin for the month of May, 1910, was very similar to that of March and April, especially regarding temperature and precipitation. Generally clear, sunshiny weather prevailed with temperatures averaging much above normal, and precipitation much below normal. All vegetation showed the effects of the excess in temperature and the deficiency of rain.

In that portion of Utah lying in the district, the mean temperature was the highest on record, excepting May, 1897, 1900, and 1901. This statement is also applicable, in a large measure, to the remainder of the district.

TEMPERATURE.

The temperature for the district as a whole averaged almost 57°, which is about 3° above the normal. The mean temperature ranged from 45.8°, at Dutton in northern Nevada, to 73.3°, at Jean in southern Nevada. Of the long record stations only 3 reported temperatures below the normal. The greatest daily excess of temperature, 6.5°, occurred at Burns and Silver Lake, Oreg.; while the greatest deficiency, 1.7°, occurred at Tecoma, Nev. The highest mean temperature occurred in the valleys of Utah, the lake region, and southern portion of Nevada. The lowest means were confined, of course, to the more elevated portions of the district.

The first few days of the month were comparatively cool, but the temperatures gradually rose and the weather continued warm for the remainder of the first half of the month. Temperatures fell, as a rule, on the 15th, but remained below normal for only a few days. The last decade of May was the warmest period of the month and culminated in very hot weather on the 30th and 31st.

The highest temperature was 112° at Jean on the 31st. Other high temperatures were 103° at Richfield and Fillmore, Utah, on the 31st; 102° at Stone, Idaho, Battle Mountain, Carlin, Fallon, and Mina, Nev., on the 31st; 101° at Provo, Utah, on the 30th; Cobre and McAfee's Ranch, Nev., on the 31st; and 100° at Oak City, Utah, and Fernley, Nev., on the 30th; while maximum temperatures of 90° and over were reported at most of the other stations in the district.

The only generally cool periods extended from the 1st to the 5th, and from the 15th to the 17th, during which periods the lowest temperatures were, for the most part, recorded. The lowest for the district was 11°, observed at Potts, Nev., on the 15th. During the first cool spell scattered frosts occurred, doing some damage in Nevada. Frosts during the middle of the month were quite severe, but resulted in little damage.

Precipitation is usually quite heavy in May compared with other months; but during the current month there were only 2 rainy days on the average, and the precipitation for the district averaged only 0.41 inch, which is 0.84 inch below the normal. The largest monthly amounts fell in the central portion of Utah, while none occurred at many stations in Nevada.

The greatest rainfall for the month at any station was 2.45 inches, observed at Corinne, Utah, all of which fell in a single thunderstorm on the 5th. The next largest amount was 2.12 inches at Wells, Nev. Of the long record stations, these and Potts are the only ones reporting an excess over their normal amounts.

This month was one of the driest on record. The rain fell for the most part in local showers, and the precipitation chart does not exhibit the usual evenness of distribution characteristic of May.

The table of precipitation shows 5 dates around which the greatest amount of precipitation fell, 1st, 4th, 15th, 20th, and 25th. The heaviest showers occurred during the fore part of the month. In Utah rain was badly needed during the month and at the close arid farm grain was suffering considerably. Streams were low and there was no probability of the customary June floods anywhere, though it was generally thought that the supply of irrigation water would be ample.

The section director of Wyoming says:

The first 5 months of the year were unusually dry over southwestern Wyoming, the precipitation being deficient every month at all of the stations in Wyoming lying in District No. 10. At Evanston the total precipitation for the 5 months was only 3.40 inches, which is 3.63 inches below the normal for the period, and is the lowest precipitation on record at that station for that period of the year. The observer at Evanston reported the ground the driest ever known at the close of May. At Border the total precipitation for the first 5 months of the year was only 2.61 inches, which is 4.31 inches below the normal, and the spring was the driest on record. The observer at Border reported that crops were poor at the close of May and the ground very dry. The range was unusually poor, and good rains are needed to give range grass the usual spring growth.

NOTES.

The following notes are found in the Vernal Express:

Seventy-six thousand acres of land will presently be reclaimed in the famous Beaver district. This land will be put on the market by the Beaver Irrigation, Land and Power Company. The land is situated south and southeast of Milford, in Minersville Canyon.

There have been 202,000 acres of arid land taken up in the State of Utah, under section 6 of the enlarged Homestead Act of February 19, 1909, according to a report made by the United States Land Office in Salt Lake City to the General Land Office at Washington, D. C.

The Grand Valley Times says that the headgates of the Irrigated Lands Company are about ready to open. There are 20 miles of canals which will carry water from the Price River over 20,000 acres of land. It is expected that between 2,000 and 3,000 acres will be planted to fruit.

The level of Great Salt Lake registered at 7.0 feet on May 1, 7.1 on May 15, and 7.0 on the last day of May. The stage of 7.1 feet was the highest reading recorded since the establishment of the Weather Bureau gage in July, 1903, when the lake was quite low. In 1899 and 1900 the lake was about as high as at present. The lowest reading recorded since then was 1.1 foot below the zero of the gage in November, 1905.

TABLE 1.—Climatological data for May, 1910. District No. 10, Great Basin.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Wyoming.																				
Border	Uinta	6,085	8	48.4	+ 1.8	87	31	20	17	54	T.	- 1.51	T.	0.0	0	24	3	4	w.	S. W. Condron.
Cokeville	do.	5,400	3	51.4	.....	90	29	18	17	60	0.26	.....	0.17	0.0	4	28	1	1	w.	E. J. Tuckett.
Evanston	do.	6,860	14	48.2	+ 2.3	84	31	25	17	47	0.33	- 1.45	0.24	3.5	2	21	8	2	w.	Frank Tucker.
Idaho.																				
Geneva	Bear	.....	2	.....	.....	.....	.....	.....	.....	.....	0.37	.....	0.27	0.0	3	27	4	0	.....	F. W. Boehme.
Grace	Bannock	5,406	3	53.1	.....	90	31	27	17	50	0.26	.....	0.08	0.5	5	16	7	8	n.	Cyril B. Dickson.
Oxford	do.	4,750	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Edwin Smith.
Paris	Pear Lake	5,946	16	50.2	+ 1.0	86	30	23	17	48	0.35	- 0.92	0.20	0.0	3	22	9	0	w.	John Norton.
Stone	Oneida	4,520	2	54.1	.....	102	31	19	17	60	.....	.....	.....	.....	.....	.....	.....	.....	s. i.	Thos. W. Roe.
Weston	do.	4,460	12	53.6	+ 1.2	89	31	25	17	48	0.89	- 1.55	0.29	0.0	6	18	4	9	s.	Wm. Chatterton.
Utah.																				
Alpine	Utah	4,900	13	.....	.....	.....	.....	.....	.....	.....	0.05	.....	0.05	0.0	1	23	8	0	.....	George Stevens.
Annabella	Sevier	5,250	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. W. Fairbanks.
Beaver	Beaver	6,000	7	57.0	.....	91	31	30	17	40	0.14	.....	0.10	0.0	2	16	14	1	nw.	James Connell.
Black Rock	Millard	4,872	10	58.6	.....	99	31	28	17	54	0.00	.....	0.00	0.0	0	17	10	4	.....	W. D. Livingston.
Castle Rock	Summit	6,244	7	.....	.....	.....	.....	.....	.....	.....	0.68	.....	0.20	6.0	6	19	4	8	.....	David Moore.
Cedar City	Iron	5,750	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Parley Dalley.
Corinne	Boxelder	4,240	40	60.3	0.0	99	30	32	17	54	2.45	+ 1.05	2.45	0.0	1	10	12	9	n.	A. C. Murphy.
Deseret	Millard	4,541	16	59.4	+ 3.6	97	31	27	16	51	0.28	- 1.01	0.20	0.0	2	17	7	7	n.	S. W. Western.
Enterprise	Washington	4,270	2	.....	.....	.....	.....	.....	.....	.....	0.02	.....	0.01	0.0	1	14	11	6	s.	John Day.
Farmington	Davis	4,267	10	57.5	.....	90	31	33	2	44	0.17	.....	0.10	0.0	3	21	7	3	sw.	Charles Boylin.
Fillmore	Millard	5,100	20	62.6	+ 5.4	103	31	33	5	58	0.58	- 1.14	0.50	0.0	2	.....	.....	.....	.....	J. J. Starley.
Friess Summit	Wasatch	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.33	.....	0.40	9.0	4	14	15	2	n.	Victor A. Friese.
Frisco	Beaver	7,318	16	57.6	+ 2.4	97	31	28	16	45	0.24	- 0.76	0.16	0.0	2	.....	.....	.....	.....	E. R. Smyth.
Garrison	Millard	.....	7	60.6	.....	94	31	32	3	49	0.25	.....	0.25	0.0	1	.....	.....	.....	.....	E. M. Smith.
Government Creek	Tooele	5,277	10	58.1	.....	95	31	29	2	42	0.28	.....	0.17	0.7	3	23	6	2	nw.	Walter James.
Grantsville	do.	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.23	.....	0.15	0.0	3	.....	.....	.....	.....	Allen J. Fraser.
Heber	Wasatch	5,606	17	54.0	+ 2.1	90	31	22	1	53	0.31	- 1.43	0.10	0.0	4	18	9	4	s.	John Crook.
Henefer	Summit	5,301	11	52.6	.....	89	31	24	2	54	0.41	.....	0.11	0.0	6	16	10	5	w.	Wm. Brewer.
Ibapah (near)	Tooele	7,500	5	52.2	.....	88	31	21	16	43	1.03	.....	0.51	4.2	3	16	9	4	w. b.	J. S. Lawton.
Ibex	Millard	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John J. Watson.
International	Tooele	5,370	.....	58.2	.....	90	31	35	5	31	0.34	.....	0.19	0.0	4	18	7	6	se.	I. S. & R. Co.
Kanosh	Millard	5,250	2	.....	.....	.....	.....	.....	.....	.....	0.35	.....	0.34	0.0	2	.....	.....	.....	.....	Geo. Crane.
Kelton	Boxelder	4,230	32	53.8	.....	92	31	27	17	47	0.47	.....	0.40	.....	2	12	14	5	sw.	F. W. Klock.
Levan	Juab	5,010	20	56.6	+ 2.2	91	31	29	16	44	1.05	- 0.83	0.39	0.0	4	19	7	5	n.	Wm. Brown.
Logan	Juab	4,507	10	57.1	+ 2.8	92	31	31	16	33	1.08	- 1.36	0.25	0.0	6	.....	.....	.....	.....	Edgar Broadard.
Lurin	Boxelder	4,504	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. J. Burke.
Manti	Sanpete	5,575	16	50.8	- 0.5	80	31	28	17	30	0.67	- 0.64	0.29	0.0	3	13	3	15	.....	J. M. Anderson.
Marion	Summit	6,750	6	.....	.....	.....	.....	.....	.....	.....	0.28	.....	0.07	1.2	7	10	9	12	nw.	Jan. Woolstenhulme.
Marysville	Piute	6,180	11	55.4	.....	96	31	24	17	53	0.10	.....	0.08	0.0	3	15	6	10	n.	John W. Henry.
Meadowville	Rich	6,200	11	51.0	.....	83	31	25	17	46	T.	.....	T.	0.0	0	23	3	5	w.	J. S. Moffat.
Midford	Beaver	4,962	6	63.0	.....	98	31	34	29	60	0.00	.....	0.00	0.0	0	18	7	6	sw.	C. M. Temple.
Millville	Cache	4,848	15	.....	.....	.....	.....	.....	.....	.....	1.10	- 1.25	0.26	0.0	10	14	13	4	n.	Fred Yeates.
Minersville	Beaver	5,070	13	.....	.....	.....	.....	.....	.....	.....	0.05	.....	0.05	0.0	1	.....	.....	.....	.....	Geo. Roberts, sr.
Modena	Iron	5,479	10	57.4	+ 2.9	92	30	23	5	44	0.16	- 1.22	0.12	0.0	2	16	12	3	w.	U. S. Weather Bureau.
Morgan	Morgan	5,087	7	.....	.....	.....	.....	.....	.....	.....	0.57	.....	0.20	0.0	5	6	24	1	w.	W. Visick.
Moroni	Sanpete	5,519	2	.....	.....	.....	.....	.....	.....	.....	0.45	.....	0.22	0.0	3	20	7	4	n.	B. F. Eliason.
Mount Nebo	Utah	4,650	9	60.2	.....	93	31	32	2	48	0.45	.....	0.22	0.0	3	20	7	4	n.	D. C. Walkey.
Mount Pleasant	Sanpete	5,859	18	65.0	.....	88	29	40	5	24	0.22	.....	0.17	0.0	2	12	8	8	.....	C. B. Scoville.
Nephi	Juab	6,059	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. Madsen.
Oak City	Millard	4,900	6	61.6	.....	100	30	31	16	49	0.50	.....	0.27	0.0	3	13	15	3	.....	Peter Nielson.
Ogden	Weber	4,310	9	59.2	+ 2.7	92	31	35	5	33	1.33	- 0.46	0.74	T.	4	23	7	1	nw.	Enoch Farr.
Panguitch Lake	Garsfield	9,000	1	.....	.....	.....	.....	.....	.....	.....	0.05	.....	0.05	0.0	1	4	22	5	n.	Jas. E. Prince.
Park City	Summit	7,800	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Irvin Evans.
Parowan	Iron	5,970	19	59.8	+ 4.9	92	1	29	16	57	0.21	- 0.96	0.10	0.0	3	25	0	6	.....	S. M. Matheson.
Payson	Utah	4,637	7	.....	.....	.....	.....	.....	.....	.....	0.71	.....	0.45	0.0	4	13	11	7	sw.	D. L. Coombs.
Pinto	Washington	5,907	13	51.9	+ 2.4	93	31	18	5	53	0.04	- 1.05	0.04	0.0	1	13	9	1	s. i.	J. H. Harrison.
Promontory	Boxelder	4,913	30	.....	.....	.....	.....	.....	.....	.....	0.05	- 0.88	0.05	0.0	1	.....	.....	.....	.....	F. C. Houghton.
Provo	Utah	4,532	18	61.4	+ 4.1	101	30	30	1	68	0.50	- 1.45	0.35	0.0	2	7	22	2	n.	James A. Oliver.
Randolph	Rich	6,442	7	.....	.....	.....	.....	.....	.....	.....	0.23	.....	0.09	0.0	5	18	9	4	sw.	William Rex.
Richfield	Sevier	5,350	20	60.2	+ 4.0	103	31	30	1	57	T.	- 0.52	T.	0.0	0	22	2	7	.....	Joseph J. Jensen.
Saltair	Salt Lake	4,220	7	60.9	.....	92	31	41	15	23	0.49	.....	0.31	0.0	5	.....	.....	.....	.....	E. J. Bench.
Salt Lake City	do.	4,366	36	60.1	+ 1.8	81	31	34	15	32	0.47	- 1.48	0.16	0.0	7	17	13	2	nw.	U. S. Weather Bureau.
Scipio	Millard	5,260	15	56.6	+ 3.3	94	31	22	17	56	0.51	- 1.16	0.44	0.0	2	12	11	8	sw.	Thos. Memmott.
Silver City	Juab	6,127	.....	.....	.....	.....	.....	.....	.....	.....	0.25	.....	0.19	0.0	4	10	13	8	s.	J. L. Stark.
Spanish Fork Canyon	Utah	4,585	1	60.6	.....	92	31	35	2	37	0.79	.....	0.60	0.0	4	24	3	4	.....	U. S. Reclamation Service.
Thistle	Utah	5,075	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Denver & Rio Grande Ry.
Tooele	Tooele	4,900	14	58.0	+ 2.5	90	31	31	5	38	0.49	- 2.14	0.34	0.0	4	9	8	14	n.	E. A. Bonelli.
Utah Lake Pumping Sta.	Utah	4,500	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. A. Knight.
Woodruff																				

TABLE 1.—Climatological data for May, 1910. District No. 10—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Nevada—Cont'd.																				
Fallon.....	Churchill.....	3,965	5	61.2	+ 5.5	102	31	28	5	48	0.00	- 0.79	0.00	0.0	0	25	5	1	w.	U. S. Reclamation Service.
Fernley.....	Lyon.....	4,200	2	62.8	+ 4.2	100	30†	33	6	44	0.02	- 0.68	0.02	0.0	1	22	5	4	w.	Mrs. A. J. Rankin.
Gardnerville.....	Douglas.....	4,830	10	59.7	+ 6.6	98	30	26	4†	54	0.00	- 0.71	0.00	0.0	0	21	8	2	e.	Wm. Dangberg.
Geyser.....	Lincoln.....		5																	Mrs. J. F. Wambolt.
Glenbrook.....	Douglas.....																			C. C. Henningsen.
Gileonda.....	Humboldt.....	4,097	31	58.6	+ 2.0	99	31	29	15	47	0.25	- 0.80	0.15	0.0	2	26	2	3	sw.	Southern Pacific Co.
Halleck.....	Elko.....	5,631	17	65.7 ^b		95 ^b	30	37 ^b	16	37 ^b	0.60		0.60	6.0 ^b	1 ^b	20	4	7	nw. ^b	Do.
Jean.....	Clark.....	2,074	2	73.3 ^c		112 ^c	31	31 ^c	6	58 ^c	0.00		0.00	0.0 ^c	0 ^c	31	0	0	sw.	Salt Lake Route.
Leetville.....	Churchill.....	4,020	3	61.2 ^d				28 ^d	5	43 ^d	0.00		0.00 ^d	0.0 ^d	0 ^d	24	5	2	w.	U. S. Reclamation Service.
Lewers Ranch.....	Washoe.....	5,500	22	57.6	+ 4.5	94	30	25	5	45	0.10	- 1.43	0.10	T.	1	13	16	2		Ross Lewers.
Lovelock.....	Humboldt.....	3,977	7	59.2	+ 0.8	99	30	29	10	56	0.01	- 0.31	0.01	0.0	1	31	0	0		J. S. Case.
McAfee's Ranch.....	Esmeralda.....	4,935	6	63.4		101	31	32	14	62	0.00		0.00	0.0	0	11	8	12	n.	C. H. Rodenkirch.
Millett.....	Nye.....		2	56.4		97	31	22	5	33	0.33		0.20	0.0	2	25	5	1	w.	Fred J. Jones.
Mina.....	Esmeralda.....	4,600	3	66.0		102	31	25	4	43	0.00		0.00	0.0	0	20	6	5	sw.	Southern Pacific Co.
Mount Rose Ranch.....	Washoe.....			54.4		89	30	23	5	40	0.10		0.10	0.0	1	25	3	3	sw.	Fred Elkins.
Palmetto.....	Esmeralda.....	6,780	20																	Isaac McConnell.
Potts.....	Nye.....	6,990	17	52.2	- 1.0	95	30	11	5	53	1.27	+ 0.05	1.25	12.0	2	13	4	14	n.	Miss Mamie Potts.
Quinn River Ranch.....	Humboldt.....	4,850	8	55.6		98	30	24	17	58	0.04		0.04	T.	0	22	4	5	w.	F. M. Payne.
Reno.....	Washoe.....	4,532	39	59.7	+ 5.7	98	31	28	5	44	T.	- 0.82	T.	T.	0	20	8	3	sw.	U. S. Weather Bureau.
Soda Lake.....	Churchill.....	4,534	3	61.6		98	30†	30	5	41	0.04		0.04	0.0	1	20	9	2	nw.	U. S. Reclamation Service.
Tecoma.....	Elko.....	4,812	32	53.5	- 1.7	97	31	21	16	60	0.01	- 0.93	0.01	T.	1	10	11	10	se.	Southern Pacific Co.
Tonopah.....	Nye.....	6,090	3	60.8		94	31	27	4	30	0.18		0.18	2.0	1	17	13	1	nw.	U. S. Weather Bureau.
Wabuska.....	Lyon.....	4,347	7								0.00		0.00	0.0	0					J. G. Young.
Wells.....	Elko.....	5,631	38	57.0	+ 3.8	92	29	28	2	51	2.12	+ 1.22	1.42	4.0	3	17	9	5	s.	Southern Pacific Co.
Winnemucca.....	Humboldt.....	4,432	31	58.7	+ 4.3	98	31	32	16	46	0.27	- 0.76	0.26	T.	2	18	8	5	se.	U. S. Weather Bureau.

- ^a, ^b, ^c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
^{*} Precipitation included in that of the next measurement.
^{**} Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.
[†] Also on other dates.
[‡] Separate dates of falls not recorded.
[§] Data are from standard instruments not supplied by the U. S. Weather Bureau.
^{||} Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.
[¶] Estimated by observer.
^{|||} Precipitation for the 24 hours ending on the morning when it is measured.
^T Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—Daily precipitation for May, 1910. District No. 10, Great Basin.

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Wyoming.																																	
Border	Bear				T.	T.					T.			T.						T.							T.					T.	
Cokeville	do	.01	T.			.17					T.										.06						.02					0.2	
Evanston	do				T.	.24									.09						T.						T.					0.3	
Idaho.																																	
Geneva	Bear				.06	.04								.27																	0.3		
Grace	do	.08	T.		.04	.07					T.				.03					T.							.04					0.2	
Oxford	do																															0.3	
Paris	do	.05								.10										.20												0.2	
Stone	Deep Creek	.09																								.18						0.2	
Weston	Bear	.29		.11		.12									.13					.06							.18					0.6	
Utah.																																	
Alpine	Great Salt Lake	.05																														0.1	
Annabella	Sevier Lake																															0.1	
Beaver	do	.04																		.10												0.0	
Black Rock	do																															0.0	
Cedar Rock	Great Salt Lake	.03			.10		.20								.10					.15							.10					0.6	
Cedar City	Desert																															0.0	
Corinne	Great Salt Lake				T.	2.45									T.											T.						2.4	
Deseret	Sevier Lake	.20																		.08												0.2	
Enterprise	Desert	T.																					.02									0.0	
Farlington	Great Salt Lake				.10	.02									T.				T.							.05						0.1	
Fillmore	Sevier Lake	.50																	.08													0.5	
Friese Summit	Great Salt Lake	.29			.33						T.				.40												.31					1.3	
Frisco	Desert	.08																	.16													0.2	
Garrison	do																															0.0	
Government Creek	do				.17	.04										.07				T.						T.						0.2	
Grantsville	do	.05				.03																						.15				0.2	
Heber	do	.08		.05	.10								T.			T.				T.						.08						0.3	
Henefer	Great Salt Lake	.10			.10	.11									.02					T.	.04	T.				.04						.04	
Ibapah (near)	Desert																															0.0	
Ibex	do																															0.0	
International	Great Salt Lake	.12	T.		T.											.01				.02							.19					0.3	
Kanosh	Sevier Lake	.34																			.01											0.3	
Kelton	Great Salt Lake				.40																					.07						0.4	
Levan	Sevier Lake	.38													.01											.27						1.0	
Logan	Great Salt Lake	.15			.25	.15									.25					.15						T.	.13					1.0	
Lucin	Desert																															0.0	
Manti	Sevier Lake	.29	T.																	.27	.11											0.6	
Marion	Great Salt Lake	.07			.02	.07				T.		T.	.02		T.					T.	.04	.02				.04		T.				0.2	
Marysvale	Sevier Lake	.01													T.						.01	.08										0.1	
Meadowville	Great Salt Lake					T.																										T.	
Millford	Sevier Lake	.12																		.02	.14											0.0	
Millville	Great Salt Lake	.12			.13	.26	.06				.04				.11												.12	.10				1.1	
Minersville	Sevier Lake	.05																								T.						0.0	
Modena	Desert	.12			T.															T.	.04											0.1	
Morgan	Great Salt Lake				*																											0.0	
Moroni	Sevier Lake	.18			.09					T.			T.	T.		T.				.10	T.					.20		T.				0.5	
Mt. Nebo	Great Salt Lake	.22	T.		T.															.18						.05						0.4	
Mt. Pleasant	Sevier Lake																															0.0	
Nephi	Great Salt Lake																															0.0	
Oak City	Sevier Lake	.19																		.04						.27						0.5	
Ogden	Great Salt Lake				.49	.74																				.05						1.3	
Panguitch Lake	Sevier Lake	T.			T.									.05						T.												0.0	
Paria City	Great Salt Lake																															0.0	
Parowan	Desert	.10			.05															.06												0.2	
Payson	Great Salt Lake	.45			T.	.03														.18						.05						0.7	
Pinto	Desert	.04																		T.												0.0	
Promontory	Great Salt Lake																									.05						0.0	
Provo	do	.35				.15																					T.					0.5	
Randolph	do	T.		T.	T.	.02	.04					.04			.04					.09								T.	T.	T.		0.2	
Richfield	Sevier Lake	T.																														T.	
Saltair	Great Salt Lake	.31				.01									.03					.03						.11						0.4	
Salt Lake City	do	.16			.03	.06									.04					.02	.04				.12							0.4	
Scipio	Desert	.44			T.															.07	T.											0.5	
Silver City	do	.19	.02												.02				.02									T.				0.2	
Spanish Fork Canyon	Great Salt Lake	.60		.09	T.															.05						.05						0.7	
Thistle	do																															0.0	
Tooele	do	T.			.06	T.									T.	T.	.07			T.	.02					.34						0.4	
Utah Lake Pump'g Sta.	do																															0.0	
Woodruff	do					.15									T.																	0.1	
Oregon.																																	
Ana River	Interior Drainage	.05	.20	.20																							.01					0.4	
Burns	do	.20																								.03		.11				0.3	
Burns Mill	do		T.	.42	.02					.21	.01															.03			.23			0.9	
Cecil's Ranch	do																															0.0	
Christmas Lake	do	.05		.32	.04					.04	.06																	.10	.09			0.7	
Diamond "H" Ranch	do																															0.0	
Faisley	do	.02			.10						T.																					0.1	
Flush	do																															0.0	
"P" Ranch	do			T.	.55					.02																	.21						0.7
Silver Lake	do		.20	.10	.05						.15																		.08			0.5	

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2.—Daily precipitation for May, 1910. District No. 10—Continued.

[illegible]

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 10, Great Basin.

Date.	Wyoming.				Weston, Idaho.		Utah.																				Burns, Oreg.				Elko, Nev.	
	Border.		Evanston.				Cortina.		Deseret.		Government Creek.		Marysval.		Modena.		Ogden.		Parowan.		Provo.		Salt Lake City.									
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
1...	53	30	46	28	52	30	58	36	57	40	56	38	55	29	55	38	57	37	92	35	65	30	56	42	60	29	68	37				
2...	54	31	53	30	59	29	70	35	67	36	64	29	67	25	65	36	64	37	80	35	70	34	64	39	54	33	72	36				
3...	70	24	67	26	73	30	78	38	75	39	74	40	74	30	68	33	76	49	72	36	83	48	76	49	56	29	70	35				
4...	54	24	63	29	65	37	76	33	60	47	67	41	62	44	53	31	70	41	55	40	70	44	66	44	59	38	75	42				
5...	46	21	40	33	48	35	75	35	63	36	55	35	63	25	63	23	47	35	70	35	74	40	53	38	67	37	80	45				
6...	57	35	57	34	60	40	83	40	69	32	65	34	68	29	70	32	63	42	71	30	73	37	61	46	75	41	64	39				
7...	68	32	65	30	72	34	77	41	76	35	72	36	72	30	73	39	71	45	74	41	79	38	69	45	76	36	68	38				
8...	69	30	68	31	74	37	78	45	80	38	78	42	80	31	79	41	75	49	80	43	81	42	74	48	76	38	75	46				
9...	70	34	73	34	79	39	83	40	85	39	83	45	86	33	80	38	78	52	81	44	87	45	84	53	78	32	86	54				
10...	60	32	66	42	73	50	87	42	80	55	75	54	79	45	78	46	74	57	78	48	79	55	74	57	80	34	82	42				
11...	66	29	71	36	73	34	83	40	81	41	76	40	80	40	79	40	74	49	88	48	81	42	72	50	84	36	76	41				
12...	70	30	71	33	77	37	84	44	85	50	79	49	81	44	80	48	77	55	80	50	90	47	76	54	81	34	74	38				
13...	71	34	71	37	79	43	80	46	82	56	79	53	71	44	76	54	79	56	81	49	80	56	75	59	83	34	75	29				
14...	66	29	63	30	69	35	85	42	78	45	71	44	75	36	77	46	69	50	79	38	75	37	68	52	70	28	76	46				
15...	55	26	51	28	53	33	72	37	74	32	62	32	68	32	72	35	59	36	78	36	64	31	52	34	60	28	82	39				
16...	57	30	52	26	61	36	65	35	61	27	57	30	59	35	57	30	63	38	70	29	65	35	56	39	58	29	80	42				
17...	65	20	64	25	68	25	75	32	70	33	68	32	72	24	67	32	67	43	73	32	73	38	66	41	61	34	78	29				
18...	67	24	63	27	74	30	72	36	77	33	74	38	74	29	74	32	74	44	74	39	85	37	71	45	63	32	74	29				
19...	68	32	62	27	69	35	78	33	80	36	76	44	75	35	75	39	73	48	74	40	88	42	73	50	64	29	72	35				
20...	66	30	55	24	62	34	80	38	61	50	66	45	65	43	67	40	62	44	75	41	70	47	62	46	66	33	70	43				
21...	62	28	57	27	70	36	70	40	70	34	65	33	65	30	71	33	70	43	68	30	69	38	64	44	72	35	72	28				
22...	71	28	68	25	76	32	75	46	78	34	75	36	73	31	75	38	78	46	75	33	98	30	71	46	85	45	80	33				
23...	77	31	73	28	82	37	87	38	83	40	82	44	84	34	81	37	82	50	86	36	98	30	81	52	88	48	83	36				
24...	77	36	74	36	80	42	90	45	85	49	87	53	81	36	80	46	83	54	83	34	98	30	86	54	82	40	80	43				
25...	75	44	70	41	66	48	86	43	74	53	78	54	71	49	77	49	79	52	79	39	77	44	70	51	76	37	73	54				
26...	67	32	65	32	74	39	80	40	80	50	75	39	79	36	81	44	75	46	80	44	80	43	72	48	71	41	78	37				
27...	70	34	73	35	71	40	85	46	90	44	86	52	87	37	85	44	78	53	83	48	95	48	81	54	76	38	75	41				
28...	68	31	68	32	75	35	84	45	83	50	78	42	84	43	84	51	77	47	84	53	84	49	74	52	80	44	79	36				
29...	80	30	78	35	85	37	88	48	92	41	89	47	91	41	89	45	87	56	89	50	97	47	86	55	88	46	89	37				
30...	82	33	82	40	88	40	99	45	96	50	91	50	93	42	92	53	90	58	91	56	101	53	88	60	90	51	91	41				
31...	87	33	84	37	89	41	99	52	97	48	95	53	96	44	92	48	92	59	92	58	100	50	91	65	97	57	94	45				
Mns	66.7	30.2	64.9	31.5	70.8	36.5	80.1	40.5	77.1	41.7	74.1	42.1	75.2	35.7	74.7	40.0	73.0	45.5	78.5	41.0	80.4 ^b	42.3 ^b	71.4	48.8	73.4	37.0	77.1	39.2				

Date.	Nevada.																							
	Ely.		Eureka.		Fallon.		Jean.		Lovelock.		Millet.		Mina.		Quinn River Ranch.		Reno.		Tecoma.		Tonopah.		Winnemucca.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	56	31	63	35	83	47	66	33	62	28	82	41	65	35	61	32	68	24	58	34	62	35		
2...	63	39	70	37	85	45	74	43	69	31	76	40	68	31	65	36	62	22	67	44	66	36		
3...	62	31	67	42	85	45	71	40	63	41	67	32	68	32	49	34	44	27	57	34	53	35		
4...	40	28	59	38	74	45	55	35	63	30	72	25	53	29	52	34	46	28	46	27	50	33		
5...	54	19	65	28	71	40	64	22	70	34	66	34	66	34	67	28	41	23	62	33	62	33		
6...	65	30	77	34	89	31	70	38	75	27	81	44	67	31	76	35	72	26	71	45	72	38		
7...	70	35	81	40	93	43	66	33	72	34	79	50	81	36	81	44	76	32	73	51	78	40		
8...	75	40	86	44	94	53	68	38	79	35	76	48	85	37	84	48	84	35	75	56	84	44		
9...	77	49	80	52	97	51	69	37	81	40	79	44	79	44	79	44	83	38	76	50	77	49		
10...	72	37	77	42	94	53	85	29	76	33	74	44	71	43	68	47	78	36	72	44	72	41		
11...	74	36	75	38	95	50	75	41	77	32	84	41	78	45	76	36	81	33	74	46	73	41		
12...	78	43	82	41	97	53	73	40	79	43	80	46	81	34	81	42	78	35	76	51	79	45		
13...	75	41	81	47	94	60	81	51	78	38	85	42	81	47	77	45	83	34	75	51	80	46		
14...	72	39	73	48	93	54	83	43	77	39	82	40	71	46	78	44	81	35	71	48	73	45		
15...	69	30	75	44	91	59	76	40	70	33	88	48	60	40	68	43	46	25	66	40	56	36		
16...	62	23	69	30	84	50	79	42	66	35	84	51	71	29	65	39	52	21	63	35	67	32		
17...	68	34	76	35	80	55	80	48	70	26	86	60	78	24	76	36	68	24	67	43	73	36		
18...	75	34	81	40	90	41	78	41	77	31	85	56	79	30	76	45	76	36	72	51	78	35		
19...	73	39	80	46	90	54	81	42	75	33	78	48	76	40	73	44	78	35	71	51	75	46		
20...	67	37	76	53	86	55	82	37	71	47	86	52	75	44	75	51								

Climatological Data for May, 1910.
DISTRICT No. 11, CALIFORNIA.

Prof. ALEXANDER G. McADIE, District Editor.

GENERAL SUMMARY.

The beginning of the month of May was marked by unusually cool weather in the Great Valley of California and along the coast north of the Tehachapi. The cool spell soon came to an end, and the month as a whole was one of unusual warmth. Near the close of the month there was a warm spell with afternoon temperatures above 90° on the coast, and ranging from 100° to 120° in the interior. Memorial Day was the hottest day of the year. At San Francisco the maximum temperature was 90°, making the day the warmest in May since 1896. It is worth noting that on this same date a temperature of 120° was recorded at Yuma, which, it is thought, breaks the record for high temperatures. At 3 stations in California reliable records of 121° F. were obtained on May 30. Throughout the Great Valley and also in the southern counties very high temperatures were recorded.

Reports from other sections, particularly from the central portion of the country, will doubtless show a cool May, as the excessive heat noted on the Pacific Slope does not appear to have extended east of the Rocky Mountains. In some respects May throughout California was more like the average mid-summer month. Owing to almost ideal distribution of rainfall with regard to frequency during the winter and early spring months, the hills remained green until near the end of May, notwithstanding the comparative absence of rain and the general dryness of later months.

The snow cover in the mountains, which was none too heavy at the beginning of the month, steadily decreased in depth, and the rate of melting may be taken as a fair average because there were few disturbing factors. The station at Summit reported 13 inches of snow on the ground at the beginning of the month and 3 inches at the close. During the first 10 days of the month the rate of melting was exceedingly slow and practically no decrease occurred. The snow cover disappeared, in the 6,000-foot level, at the rate of 10 inches during the last 2 decades of May, or about half an inch a day.

The precipitation was less throughout the entire State than during any May since 1903, when state averages began to be recorded. The average precipitation for California during May, based upon records of over 150 stations, was as follows: 1903, 0.14 inch; 1904, 0.22 inch; 1905, 2.18 inches; 1906, 3.19 inches; 1907, 0.57 inch; 1908, 1.63 inch; 1909, 0.23 inch; 1910, 0.18 inch.

The month was, therefore, unusually dry. An interesting record of rainfall at San Francisco, covering a period of 61 years, shows that there have been but 6 Mays during this period in which the precipitation at that place was less than during the present month.

TEMPERATURE.

The mean temperature for the State was far above the normal. The mean values for California in recent years are as follows: 1903, 63.5°; 1904, 64.9°; 1905, 59.6°; 1906, 59.8°; 1907, 61.5°; 1908, 58.0°; 1909, 60.4°; 1910, 65.5°.

Compared with recent previous years the present May breaks the record. It will be noted that it was fully 5° warmer than the same month last year, which, while dry like the present May, was a cool month. It is not easy to explain why these 2 dry months should exhibit such a difference in temperature. It may, however, be of some interest to note that there was a great difference in the depth of the snow cover in the 2 months. The extent and depth of the cover were greater during the cool month. One other relation is significant. There was an excess of wind during May, 1909. During the present May the prevail-

ing northwest summer winds were neither high nor prolonged. One fact which lends weight to the belief that there is some general relation between the excessive heat of the present May and the absence of strong winds is that the coldest May recorded since 1903 was that of 1908, which was the windiest May on record.

The mean temperature was 65.5°, or 3.2° above the normal. At many stations the monthly mean temperature was 6° or more above the normal. On May 30 high temperatures were reported at nearly all points. At Blythe, Heber, and Indio, 121° was recorded. Temperatures ranging from 110° upward were quite general near the close of the month, both in the Great Valley and in the Salton Desert. The lowest temperature recorded was 6° on May 5 at Tamarack, elevation, 8,000 feet. Elsewhere is published a note describing an ascent of Mount Whitney on May 23, when a minimum temperature of -23° F., representing the lowest temperature of the whole winter, was noted. At 7 a. m. of the date mentioned the temperature was 22°.

From an agricultural standpoint temperatures throughout the State were favorable, except during the middle of the month and at the end.

It is reported that on certain spots in the delta lands there were some frosts which damaged beans slightly.

PRECIPITATION.

The greatest 24-hour rainfall was 1.10 inch at Inskip. The greatest monthly amount was at Monumental, 3.19 inches. More than half the stations reported no rain during the month. From an agricultural standpoint the absence of rain was not beneficial. While some slight damage to hay and cherries generally results from heavy May rains, still the ultimate good resulting from the water supply at this time is generally recognized. May rains, as a rule, mean heavy yields of fruit and grain.

SNOWFALL.

Not in many years has the snow cover been so restricted. Owing to the comparatively light fall during the previous month the depth of snow on the ground was less at the close of the month than for many years. The season, so far as travel in the mountains is concerned, is an open one, and pack trains will probably find no difficulty in getting through the high passes of the Sierra early in June. At the close of May snow was practically gone at elevations below 5,000 feet.

The outlook is not favorable for an ample supply of water during the long summer.

EARTHQUAKES.

On May 6, at 8:46 a. m., a light earthquake shock was felt at Bakersfield, also at Fresno and points in the San Joaquin Valley. On May 13 light shocks were felt in southern California, especially in the San Bernardino Valley, at 10:20 p. m., and a shock was reported also at Needles at 10:35 p. m. On May 15, about 8 a. m., light shocks were felt at San Diego and Los Angeles.

The following note from the official in charge at Los Angeles describes the shocks of May 12 and 15:

The shock on the 12th was light and occurred at 10:22 p. m. The motion was apparently from north to south and was sufficient to stop clocks in the downtown office buildings and at some places in the residential section of the city. That of the 15th was more marked and consisted of 2 shocks, one at 7:47 a. m. and the other at 7:47:45 a. m. Both vibrations were from north to south. The latter shock was sufficient to rattle windows and crockery and to stop clocks. No damage resulted.

NOTES ON RIVER CONDITIONS IN THE SACRAMENTO AND SAN JOAQUIN VALLEYS DURING MAY, 1910.

Sacramento watershed.—All streams in the Sacramento drainage basin were lower than for many years previous during the corresponding month. This was particularly so of the Sacramento River itself, which, at many points, was much lower than for any May of which there is authentic record.

At Red Bluff the average gage reading, 3.1 feet, is 0.5 foot lower than that of May, 1908, when the Sacramento and tributaries were unusually low. At Colusa and Knights Landing the river averaged 2 feet and 0.7 foot, respectively, below the May stage of 1908. At Sacramento City the average stage, 16.4 feet, was 0.2 foot above that of May, 1908, but with this exception, it was over 2 feet lower than for any May during the past ten years.

The Yuba River at Marysville maintained a fairly good stage of water from the 1st to the 14th, inclusive; after this period, however, the river receded rapidly, and at the close of the month was over 1 foot lower than on the 14th, and the monthly average was over 2 feet lower than for May, 1908.

The Feather River at Oroville was uniformly low during the entire month with an average of over 1 foot below the low water of May, 1908. The range of this stream, between the highest stage on the 1st and the lowest on the 31st, was only 2.6 feet, indicating that the water reserve in the mountains has become exhausted from 20 to 30 days earlier than usual.

While the American River carried considerably less water than is usual during the late spring, this stream kept up reasonably well until the beginning of the last decade, when it began receding, and there was a steady fall up to the end of the month. The American as a whole was much below the May normal.

It is now evident that not only will there be a marked shortage of water during the coming summer throughout the Sacramento watershed, but it is not unlikely that navigation in the Sacramento River, beyond the tide limits, will either be seriously retarded or else suspended before the beginning of the next wet season.

San Joaquin watershed.—At the beginning of May all streams in this watershed were considerably above the usual spring stage, and reasonably high stages obtained until the middle of the month; afterwards there was a steady decline. The San Joaquin itself, from the mouth of the Tuolumne to the lower islands, continued above the May normal during the entire month.

General conditions now indicate that there will be an absence of the usual June rises in the San Joaquin and tributaries, and that the extreme low water, that usually culminates during the last of August, will occur this season from 20 to 30 days earlier.

The rainfall throughout the entire central valleys of the State was markedly deficient.—*N. R. Taylor, Local Forecaster.*

A MAY ASCENT OF MOUNT WHITNEY, CAL.

It may be recalled that last summer the Weather Bureau sent a representative to the summit of Mount Whitney, with the Campbell-Abbot party, representing the Lick Observatory and the Smithsonian Institution. A small building has now been erected by the Smithsonian. Before leaving the summit Professor McAdie and Mr. G. F. Marsh made a temporary shelter, fastening the same to the north wall of the observatory building, about 5 feet above the ground. Maximum and minimum thermometers were placed in proper position. On May 24, 1910, the following telegram was received from Mr. G. F. Marsh, cooperative observer at Lone Pine:

Just returned from Mount Whitney; found everything all right; minimum twenty-three degrees below zero, maximum fifty-five. At seven this morning minimum twenty-two above. First snow ten thousand feet. Little snow up to twelve to thirteen thousand. Snow about same as first July last year. Little snow above thirteen thousand. Made trip alone.

Mr. Marsh's feat was quite an achievement and it was very gratifying to learn that the instruments had successfully with-

stood the winter's storms. The temperature -23° F., probably fairly represents the lowest temperature of the winter at the highest point in the United States proper. Lower temperatures were recorded at lower elevations; for example, -30° F. at Alturas, Cal., on January 3, 1909, elevation 4,460 feet; and -29° F. at Tamarack, Cal., elevation 8,000 feet, on January 5, 1909. The result confirms our previous experiment made in the winter of 1898, when a minimum thermometer was exposed in a rough shelter a few feet above the ground, near the summit of Mount Lyell, elevation 13,217 feet. The lowest temperature recorded by the thermometer when found the next summer was -17° F. During the same period temperatures as low as -30° F. were recorded at Bodie, Cal., elevation 8,248 feet.

Prof. J. E. Church, jr., so well known in connection with the work at Mount Rose, states that the minimum temperature at that point during the winter was probably on February 1, the instruments reading as follows: Exposed, -7.5° F.; minimum, reset, -8° F.; thermograph, -5° F. Unfortunately the summit was not visited between December 16, 1909, and February 1, 1910. The minimum for January 5 can not therefore be given. The minimum thermometer for this period registered -28° F., almost the same as on Mount Whitney; but the real minimum he thinks is represented by the figure given above. Professor Church holds the opinion that the index had been shaken down about 20° by wind action.

PUMPED IRRIGATION.

The following abstract of a paper read at the Pacific Coast meeting of the American Institute of Electrical Engineers, May 6, 1910, on "Hydroelectric Power as Applied to Irrigation," by John Coffee Hayes, shows in part the work done in California in developing agriculture by pumped irrigation.

The paper covers a wide range and goes into many details concerning the construction of various power plants in California, showing also the way in which the water is diverted.

The reader who cares for a further knowledge of the paper is referred to the Journal of Electricity, Power, and Gas, Vol. 24, No. 23, June 4, 1910.

Among the many uses to which hydroelectric power is being applied, that of electrically pumped water for irrigation is being advocated at present in a great many instances; and while the mere pumping of the water is so simple as to be hardly worthy of discussion, it may be of interest to point out some of the operating conditions encountered in a project formed chiefly for this purpose.

A hydroelectric system to supply power for pumping water for irrigation will usually be required to build up its own market in the territory served, and it is manifestly necessary at the outset to carefully study the territory. Usually some pioneer work by progressive farmers will show what the land is capable of producing; but the greater part of the territory will consist of barren country planted to grain, or used for grazing purposes, with here and there a town. This land is in large holdings, and the first thing to be determined is the amount of subdivision which may be expected, and whether the proper men are in the field to bring this subdivision about. The character of the land is, of course, of primary importance, and the percentage of good land should be carefully determined. Irrigated land should have a slight slope for distributing the water and must be reasonably smooth. Hard pan near the surface must be carefully guarded against, as it generally denotes a rather poor quality of soil. The adaptability of the soil for different products and the climate should be considered, yet data on these two points are hard to get and are usually unreliable. Tests and analysis of the soil would seem to be the natural way of determining its adaptability to the different products, but the agriculturist pays very little attention to these analyses and has apparently a good reason for this, as they are often unreliable.

In the San Joaquin and Sacramento valleys it has been demonstrated that almost any kind of products may be raised on the good lands. Only a small portion of this land has been planted to citrus fruits, but small groves may be found along the entire length of the valley, and it would therefore seem as though it were all adapted to this class of products if water is applied. The best conditions seem to exist, however, where the mountains rise abruptly from the valley and the level flat land extends up to the foothills, for where a long stretch of rolling country lies between the plains and the hills, hard pan and bedrocks are generally very much in evidence.

Due to the fact that the oranges in the San Joaquin Valley ripen and are marketed a full month earlier than those in the southern part of the State,

they bring exceedingly good prices and the growth of this industry has been very rapid. The present citrus districts, as in fact is most of the land in the citrus belt, are above the existing irrigating canals, which in most instances divert all of the water available from the rivers, and are therefore entirely dependent on ground waters for irrigation; and, as the profits from this crop warrant a large expenditure, it is naturally the best market for power for pumping purposes. Aside from citrus fruits, all kinds of high class products, such as deciduous fruits, berries, vegetables, nuts, vines, and alfalfa, are to some extent also irrigated by pumped ground water.

The amount of water required for the irrigation of different products varies to such an extent in the different communities that it is impossible to get any figures which would be at all accurate. The character of the soil is accountable for the difference to a large extent, but the cost of water and the personal equation are accountable to a much larger extent. There is usually a marked tendency to the overuse of water. The duty of irrigation water in California is believed to average about 2 feet in depth in addition to the average rainfall.

In the Imperial Valley, in 1906, 120,000 acres were irrigated and a total average depth of 2.04 feet was used, the main crop being grain. In San Diego County on land planted to citrus fruits an average depth of 1.5 foot was used from 1889 to 1899. Around Los Angeles it is estimated that an average depth of 2.4 feet is used.

In the Modesto and Turlock districts as much as 8 feet to 10 feet in depth was used at the start; but in 1908 the depth varied from 1.2 foot to 3.6 feet. In the Fresno district very little water is applied to the surface of the land at present, the land being subirrigated by seepage from the canals.

The San Joaquin and Sacramento valleys are favorable storage basins for ground waters, as the only outlet is the San Francisco Bay through the narrow straits of Carquinez. The elevation of the Lindsay district, 250 miles away, is about 300 feet, and the ground waters must, therefore, of necessity travel very slowly and be in large quantities.

In determining the policies and the scope of a proposed hydroelectric system for the supply of power for pumped irrigation, it is necessary to determine at the outset the exact territory to be served and the general policies to be followed as regards charges, contracts, extensions, etc., or, in other words, a definite goal must be set, the power company must do everything possible to assist development, and any inhabitant in any section of the territory must be supplied with power whenever it is required. Therefore, the power system simply grows up with the country, and while this growth is taking place (it of necessity must take many years) it must be considered that the power system is in course of construction during the entire period. This is the main feature in which the power project depending entirely upon an irrigation market differs from the project supplying ordinary commercial business in an already well-settled community, and this is a difference which is seldom fully understood and the time element not fully provided for.

SPIDERS AND ANTICYCLONIC WINDS.

By FORD A. CARPENTER, Local Forecaster.

An article on "Bird-Flight and Air-Navigation" in the current number of *Century Magazine*¹ states that "It was found by a rigid comparison of the birds' movements with the weather map that their flights were invariably started by winds emanating from cyclonic or anticyclonic winds." It has been observed in this locality that spiders also utilize the anticyclonic winds. Whenever the weather map shows a high area over the north-west, the spreading of this area over Washington and Oregon starts the northerly or northeasterly winds flowing down to the so-called permanent low area in southern California, when a close observer may see flying spider webs.

Certain species throw out their thin gossamer silk and, buoyed in the air, are wafted considerable distances. Almost the first indication of the northerly or northeasterly winds (which are popularly termed "desert winds") is the quantity of tiny lengths of spider silk that float in the air. Until the advent of the glass screen to the automobile, these flying webs were annoying to the automobilists, causing irritation to the eyes. The spiders' silky streamers may be seen on the trolley and telephone wires in the early morning of a dry day.

HYDROGRAPHIC DATA OF THE SACRAMENTO RIVER.

Compiled from the records of the United States Geological Survey by W. B. CLAPP, District Engineer.

The Sacramento River is the largest and most important river in California. It drains an area of approximately 27,100

square miles in the north-central part of the State. The boundaries of its drainage basin are determined by the Sierra Nevada and Warner Mountains on the east, Mount Shasta on the north, and the Trinity Mountains and Coast Range on the west. Its length is about 230 miles north and south, with a width of about 150 miles east and west.

The Sacramento River has its source near the south boundary of Siskiyou County, near the town of Sisson, in springs issuing from the western slope of Mount Shasta. It flows southerly for a distance of about 370 miles, finally discharging into Suisun Bay, near Collinsville, about 50 miles by water from San Francisco. The Sacramento, above the mouth of the Pit River, has a length of only about 50 miles and is a comparatively small stream, but its course is through an exceptionally beautiful canyon, its flow being continually increased by water discharging from numerous large springs, among which are the famous Shasta Springs. Below the mouth of the Pit River the Sacramento is a stream of considerable magnitude and is navigable as far north as Red Bluff, about 250 miles from its mouth and 300 miles from San Francisco.

The most important tributaries of the Sacramento River are from the east, and they drain the western slope of the Sierra Nevada. The Pit River is the most important affluent, considering its drainage area and minimum flow. In fact, Pit River is the main stream and the Sacramento River, above its junction with the Pit, is a comparatively small tributary. The principal affluents of the Sacramento below Pit River, in order from north to south, are Cow, Battle, Antelope, Mill, Deer, Chico, and Butte creeks, Feather, Yuba, Bear, and American rivers from the east, and Clear, Cottonwood, Thomes, Stony, Cache, and Puta creeks from the west. Approximately 84 per cent of the Sacramento Basin is mountainous, with many high peaks and ranges and numerous small upland meadow valleys. The other 16 per cent, comprising the gently sloping areas along the lower reaches of the Sacramento River, constitutes what is known as the Sacramento Valley.

The mean annual precipitation in the basin varies with the altitude. It is least on the floor of the valley, where it averages 22 inches, but it increases rapidly in the higher mountain areas, until at elevations of from 3,000 to 5,000 feet occasional annual falls of over 100 inches occur. In the extreme northeastern part of the basin the annual precipitation is comparatively light, even on the higher elevations. The greater part of the annual rainfall comes in the winter months, particularly in December and January, when about 18 and 20 per cent, respectively, of the mean annual rainfall is received. February and March each bring about 13 per cent and November 12 per cent, so that about 76 per cent of the mean annual rainfall occurs in the period November to March, inclusive. April, May, and October furnish 20 per cent more, leaving the other 4 months practically rainless. The precipitation appears chiefly as snow at the higher altitudes. Ordinarily the snow melts slowly, not wholly disappearing until late summer, thus equalizing and extending the stream flow. At times the snow line extends to the lower elevations near the rim of the valley, which, being followed by rising temperature and heavy rains, produces floods of greater or less severity.

The Sacramento Valley probably furnishes the greatest field for development in the United States. The possibilities for irrigation are extensive. Considerable irrigation development has been carried on and the advantages for further irrigation are attracting the attention of capital throughout the United States. Many excellent storage reservoir sites exist in different parts of the Sacramento Basin. The water supply is plentiful, if properly controlled for distribution. The valley suffers from frequent floods which occur in winter and early spring, the worst of recent years occurring in 1904, 1907, and 1909. The total area of the Sacramento Valley is about 4,250 square miles, about 40 per cent of which suffers from floods by overflow.

¹MacMeehan and Dienstbach. "Bird flights and air navigation." *Century*, Vol. LXXX, p. 297.

The other 60 per cent is high land, not subject to overflow and requiring irrigation for the most successful farming.

TABLE 1.—Estimated mean monthly discharge of Sacramento River near Red Bluff, Cal., for period 1895-1908.

Month.	1895. ^a	1896. ^b	1897. ^b	1898. ^b	1899. ^b	1900. ^b	1901. ^b	1902. ^c
January.....	47,300	46,200	14,300	6,120	13,500	30,700	21,000	5,380
February.....	26,800	15,500	36,100	12,500	6,650	11,700	34,100	69,200
March.....	32,500	24,100	21,800	9,740	20,900	23,300	20,600	27,400
April.....	29,600	25,800	22,800	6,870	10,800	12,100	10,900	22,000
May.....	30,200	30,900	13,700	6,630	6,910	9,570	9,800	17,800
June.....	12,800	14,200	7,620	6,670	6,200	5,480	5,600	10,000
July.....	7,240	7,590	5,700	4,700	4,530	4,210	4,360	6,190
August.....	6,060	6,390	4,780	4,280	3,990	3,800	3,850	5,670
September.....	6,320	6,230	4,600	4,280	3,980	3,980	3,920	5,010
October.....	5,990	6,160	4,960	4,630	5,060	6,380	4,190	5,930
November.....	6,050	12,000	5,590	4,780	14,500	8,200	7,740	19,800
December.....	10,100	22,300	7,790	4,990	14,500	15,600	12,100	17,500
Yearly mean.....	18,400	18,100	12,500	6,350	9,290	11,300	11,500	17,700

Month.	1903. ^c	1904. ^c	1905. ^c	1906. ^c	1907. ^c	1908. ^c	14-year monthly mean.
January.....	25,600	11,500	31,800	14,700	21,500	21,000	22,200
February.....	17,200	46,300	26,800	23,200	45,400	23,500	28,200
March.....	31,600	73,300	30,900	42,500	55,700	15,000	30,700
April.....	18,800	38,900	18,700	26,300	32,200	12,000	20,600
May.....	10,900	25,100	12,800	19,400	15,400	10,900	15,700
June.....	6,970	12,400	8,620	18,100	12,200	7,720	9,610
July.....	5,590	8,660	6,080	8,530	7,500	5,540	6,170
August.....	4,960	6,350	5,250	6,330	6,170	4,710	5,180
September.....	4,810	6,530	5,060	6,020	5,710	4,570	5,070
October.....	5,350	11,000	5,160	5,870	5,750	5,160	5,830
November.....	22,000	8,930	5,620	6,570	6,100	6,050	9,570
December.....	13,100	13,900	6,100	15,400	11,600	6,420	12,200
Yearly mean.....	13,900	21,900	13,600	16,100	18,800	10,200	14,300

The Water Resources Branch of the United States Geological Survey has maintained gaging stations on the Sacramento River, near Red Bluff, since 1895. During 1895 the gaging station was located at the wagon bridge at the town of Red Bluff. Owing to poor channel conditions, this station was abandoned and a new station established at Jelly's Ferry, some

12 miles above Red Bluff. In January, 1902, the location of the gaging station was again changed. A point in Iron Canyon, about 4 miles above Red Bluff (where the State Engineering Department had made gagings in 1879 and 1893-4), was selected and a cable station constructed. Gagings have been continued at this location since January, 1902. The wettest year was 1904 and the driest 1898. The greatest flood occurred in March, 1907. The total flow during the wettest year was about 4 times that of the driest. The mean monthly flow is greatest in March and least in September. The mean annual flow of all streams in the basin is sufficient to cover the entire Sacramento Valley with water 10 feet in depth.

TABLE 2.—Monthly discharge of Sacramento River near Red Bluff, Cal., for period 1895-1908.

Drainage area, 9,300 square miles.^d

Month.	Discharge in cubic feet per second.					Run-off on drainage area.
	Maximum.	Minimum.	Mean.	Per square mile.		
					<i>Inches.</i>	
January.....	131,000 ^e	4,760 ^b	22,200	2.39	2.76	
February.....	185,000 ^e	5,660 ^e	28,200	3.03	3.16	
March.....	195,000 ^e	6,520 ^b	30,700	3.30	3.80	
April.....	71,600 ^e	6,520 ^b	20,600	2.22	2.48	
May.....	75,100 ^b	5,380 ^b	15,700	1.69	1.95	
June.....	33,600 ^e	4,760 ^b	9,610	1.03	1.15	
July.....	11,000 ^e	3,800 ^b	6,170	.663	.76	
August.....	7,600 ^e	3,800 ^b	5,180	.557	.64	
September.....	14,500 ^e	3,630 ^b	5,070	.545	.61	
October.....	45,300 ^e	3,800 ^b	5,830	.627	.72	
November.....	119,000 ^b	4,360 ^b	9,570	1.03	1.15	
December.....	93,000 ^b	4,700 ^b	12,200	1.31	1.51	
The period.....	195,000	3,630	14,300	1.53	20.69	

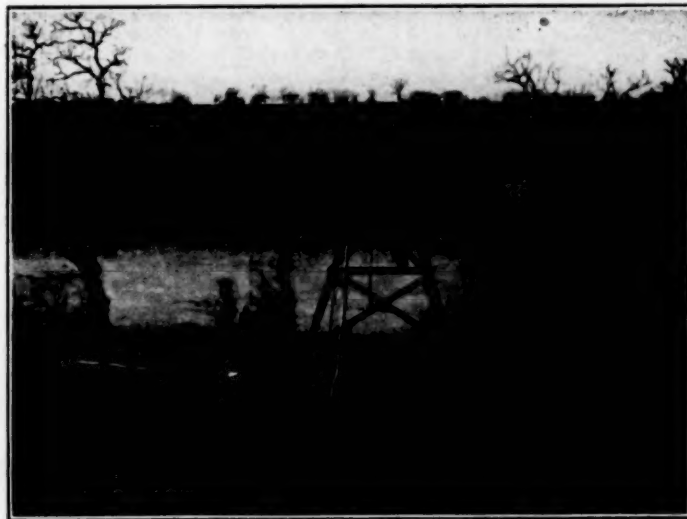
^a Record kept at highway bridge, Red Bluff.

^b Record kept at Jelly's Ferry, 12 miles above Red Bluff.

^c Record kept at cable station, Iron Canyon, 4 miles above Red Bluff.

^d Represents drainage area above cable station, 4 miles above Red Bluff. This area used for computing run-off per square mile.

NOTE.—Discharge in cubic feet per second, completed to three (3) significant figures only. Maximums represent the mean maximum for the day and not peak maximum.



Gaging station, Sacramento River, at Iron Canyon, near Red Bluff, Cal.

TABLE 1.—Climatological data for May, 1910. District No. 11, California.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Oregon.																				
Klamath Agency	Klamath	4,169	2	50.8		86	31	22	11†	52									sw.	H. J. Wilson.
Klamath Falls	do.	4,250	15	54.2	+ 1.1	90	30†	20	16	48	0.97	- 0.16	0.45	0.0	7	18	5	8	nw.	W. H. Heileman.
Lakeview	Lake	4,800	7	50.6	- 0.7	85	31	20	12†	52	0.10	- 1.48	0.10	0.0	1	20	3	8	s.	Geo. L. Wharton, jr.
Merrill	Klamath	4,070	4	54.6		93	30†	20	5†	51	0.07		0.06	0.0	2	24	3	4	s.	D. H. Ward.
Yonma	do.		3	52.4		93	29	24	17	60	0.68		0.38	0.0	4	15	12	3	s.	Jacob Rueck.
California.																				
Alameda	Alameda		1	63.5		96	30	46	6†	T.			T.	0.0	0	16	3	12	w.	Chas. E. Sears.
Alturas	Modoc	4,460	6	55.4		98	30†	25	17	61	0.63		0.18	0.0	7	20	8	3	sw.	Prof. C. B. Towle.
Anderson (near)	Shasta	550	1																	C. S. Richardson.
Angiola	Tulare	208	10	67.4	+ 0.3	112	29	42	19†	63	0.00	- 0.48	0.00	0.0	0	31	0	0	nw.	Santa Fe Co.
Antioch	Contra Costa	46	31	69.6	+ 3.5	104	30	52	4		0.00	- 0.49	0.00	0.0	0	24	4	3	nw.	Southern Pacific Co.
Aptos	Santa Cruz	102	25	62.1	+ 3.3	82	29	50	5		0.00	- 1.02	0.00	0.0	0	17	10	4	nw.	Do.
Arrowhead Springs	San Bernardino	2,000	1	65.8		107	31	40	4†	49	0.00		0.00	0.0	0					G. I. Royce.
Auburn	Placer	1,360	39	66.8	+ 4.1	102	31	36	4	42	0.12	- 1.44	0.12	0.0	1	23	0	8	se.	Southern Pacific Co.
Avalon	Los Angeles			61.0		84	10	48	6	25	0.00		0.00	0.0	0	23	7	1	w.	W. N. Vilas.
Asusa	do.	540	8	68.1		104	29†	38	4	52	0.00	- 1.02	0.00	0.0	0	25	4	2	sw.	A. P. Griffith.
Bagdad	San Bernardino	784	7	89.4		117	31	57	5	33	0.00		0.00	0.0	0					Santa Fe Co.
Bakersfield	Kern	404	21	74.6	+ 1.7	110	31	51	4†	37	0.00	- 0.18	0.00	0.0	0	31	0	0		Do.
Barstow	San Bernardino	2,105	7	73.4		111	30†	35	5	49	0.00		0.00	0.0	0	31	0	0	w.	E. L. White.
Berkeley	Alameda	317	23	60.8	+ 3.5	89	15	44	5	35	0.01	- 1.20	0.01	0.0	1	14	7	10	w.	State University.
Biggs	Butte	98	11	68.3	+ 2.3	105	30	40	4		0.30	- 0.76	0.30	0.0	1	25	3	3	s.	Southern Pacific Co.
Bishop	Inyo	4,450	15																	W. A. Chalfant.
Blackburg	Humboldt	1,700	4																	Victor Hope.
Blue Canyon	Placer	4,695	11	55.7	+ 2.8	90	30	27	3	34	0.60	- 3.15	0.40	0.0	2	28	1	2		Southern Pacific Co.
Blythe	Riverside		1	78.0		121	30	43	5	55	0.00		0.00	0.0	0	23	8	0	sw.	H. V. Blenkiron.
Brancomb	Mendocino	2,000	10	58.2		97	30	31	4†	47	0.76	- 1.85	0.50	0.0	3	18	7	6	n.	A. J. Haun.
Brasley	Imperial	- 105	1	81.6		118	30	51	6	45										U. S. Weather Bureau.
Brush Creek	Butte	2,140	6																	Cal. Gas & Electric Co.
Calexico	Imperial	0	5	81.4		116	30	54	4	41	0.00		0.00	0.0	0					J. E. Peck.
Caliente	Kern	1,290	34	75.3	+ 5.3	103	30†	56	2		0.00	- 0.63	0.00	0.0	0	31	0	0		Southern Pacific Co.
Calistoga	Napa	363	38	67.0	+ 5.5	101	31	40	1†		0.15	- 0.99	0.15	0.0	1	24	0	7	w.	Do.
Campbell	Santa Clara	217	13	60.0	+ 2.4	100	30	36	4†	50	0.00	- 0.56	0.00	0.0	0	15	4	12	nw.	F. M. Righter.
Camptonville (near)	Yuba	3,500	3	66.2		110	30	36	1†	50	0.80		0.33	0.0	3	26	1	4		S. B. Johnson.
Cedarville	Modoc	4,675	16	60.7	+ 8.8	98	31	31	5	43	0.27	- 1.33	0.18	0.0	3	27	4	0	sw.	T. H. Johnston.
Chico	Butte	189	40	68.8	+ 0.4	104	30	33	4	47	0.06	- 0.90	0.06	0.0	1	25	2	4		Butte County R. R. Co.
China Flat	Humboldt	600	1	68.2		106	31	39	16	58	0.55		0.39	0.0	2	22	7	2	nw.	O. I. Westerburg.
Chino	San Bernardino	714	18	70.2	+ 5.5	102	30	55	3†		0.00	- 0.33	0.00	0.0	0	19	9	3	sw.	Southern Pacific Co.
Cisco	Placer	5,939	39								0.30	- 2.15	0.20	3.0	2	29	0	2		Do.
Claremont	Los Angeles	1,200	18	66.1	+ 5.4	101	31	39	4†	44	0.00	- 1.00	0.00	0.0	0	26	4	1	w.	F. P. Brackett.
Cloverdale	Sonoma	340	8	66.0		107	30	37	5	52	0.21		0.21	0.0	1	21	9	1	n.	Lloyd Browne.
Colfax	Placer	2,421	39	61.2	0.0	98	31	33	5	41	0.55	- 1.84	0.35	0.0	2	24	1	6	s.	Southern Pacific Co.
Colusa	Colusa	60	7	72.0		101	29†	48	4	34	0.06	- 0.55	0.06	0.0	1					W. K. De Jarnatt.
Corning	Tehama	277	24	76.4	+ 8.2	102	30†	60	1†		0.00	- 0.93	0.00	0.0	0	31	0	0	n.	Southern Pacific Co.
Cuyamaca (I)	San Diego	4,677	11	62.2	+ 12.7	96	31	35	4	35	0.00	- 1.84	0.00	0.0	0	12	12	7	w.	L. L. Macquarie.
Daunt	Tulare	4,000	3	61.4		100	31	25	3	48	0.00		0.00	0.0	0	19	10	2		D. L. Wagoner.
Devilsville	Yolo	51	38	65.1	+ 2.8	108	30	34	4†	54	0.02	- 0.66	0.01	0.0	2	25	6	0	sw.	S. H. Beckett.
Deer Creek	Nevada	3,700	3	56.7		94	30	29	4	45	0.34		0.25	0.0	2	20	8	3		Cal. Gas & Electric Co.
Delta	Shasta	1,138	25	71.6	+ 6.8	97	30	52	8	36	0.00	- 4.01	0.00	0.0	0	27	2	2	s.	Southern Pacific Co.
Denair	Stanislaus	126	10	67.0	+ 2.7	107	31	40	1†	55	0.01	- 0.64	0.01	0.0	1	26	2	3	se.	Santa Fe Co.
Dobbins	Yuba	1,650	6	68.6		102	29†	40	4	42	0.56		0.32	0.0	3	25	2	4	s.	Cal. Gas & Electric Co.
Dudleys	Mariposa	3,000	1	57.4		94	30†	28	5	46	0.13		0.13	0.0	1	22	6	3	n.	W. H. Dudley.
Dunnigan	Yolo	65	33	79.0	+ 8.7	106	29	58	21		0.01	- 0.93	0.01	0.0	1	25	3	3	n.	Southern Pacific Co.
Dunsmuir	Siskiyou	2,285	21	64.4	+ 6.9	100	31	42	3		1.33	- 2.39	0.98	0.0	4	24	0	7	n.	Do.
Durham	Butte	160	15	67.4	+ 4.2	105	31	35	4	45	0.13	- 1.08	0.10	0.0	2	26	4	1	n.	R. W. Durham.
El Cajon	San Diego	482	11	65.8	+ 3.4	98	31	38	5	45	0.00	- 0.48	0.00	0.0	0	28	0	3	sw.	H. H. Kessler.
Electra	Amador	725	6	71.0		110	30†	41	5	48	0.09		0.06	0.0	0	27	3	1		Cal. Gas & Electric Co.
Elisnore	Riverside	1,234	15	67.4	+ 1.4	109	31	33	19	56	0.00	- 0.42	0.00	0.0	0	28	3	0	w.	W. H. Bohannon.
Emigrant Gap	Placer	5,230	36	63.6	+ 13.4	86	30	33	3	31	0.45	- 1.88	0.35	T.	2	25	0	6	sw.	Southern Pacific Co.
Escondido	San Diego	657	16	65.9	+ 3.3	94	28	36	5	47	0.00	- 0.70	0.00	0.0	0	6	23	2	w.	A. R. Moon.
Eureka	Humboldt	64	24	63.8	+ 1.7	74	16	43	28	28	0.64	- 2.19	0.27	0.0	7	6	10	15	n.	U. S. Weather Bureau.
Farlington	San Joaquin	111	31	63.5	- 2.6	104	31	47	20		0.05	- 0.86	0.03	0.0	2	25	4	2	nw.	Southern Pacific Co.
Folsom	Sacramento	252	38	69.2	+ 1.5	111	30	42	5	49	0.10	- 1.13	0.08	0.0	2	24	1	2	s.	F. O. Hutton.
Fordey Dam	Nevada	6,500	15	48.8		79	29	22	4	40	0.92	- 3.43	0.40	2.0	4	21	8	2	sw.	E. E. Roening.
Fouts Springs	Colusa	1,650	6	63.3		98	30†	31	4	47	0.11		0.11	0.0	1					H. S. Green.
Fresno	Fresno	293	23	71.0	+ 2.6	110	31	41	5	42	T.	- 0.36	T.	0.0	0	22	7	2	w.	U. S. Weather Bureau.
Fruito	Glenn	624	21	70.2	+ 2.3	108	30	42	4		0.15	- 1.35	0.15	0.0	1	28	0	3	s.	Southern Pacific Co.
Galt	Sacramento	49	32	66.3	- 0.8	100	31	49</												

TABLE 1.—Climatological data for May, 1910. District No. 11—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.					Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		Prevailing wind direction.
California—Cont'd.																				
Lone Pine	Inyo	2,728	5	68.7		100	30†	33	3	53	0.00		0.00	0.0	0	25	6	0	s.	G. F. Marsh.
Long Valley	Lassen	4,400	1	59.6		99	30†	29	4	51	0.04		0.03	0.0	2	13	15	3	sw.	A. G. Evans.
Los Angeles	Los Angeles	293	33	63.0	+ 2.5	83	28	49	6	27	0.00	- 0.43	0.00	0.0	0	17	12	2	sw.	U. S. Weather Bureau.
Los Banos	Merced	121	23																	Southern Pacific Co.
Los Gatos	Santa Clara	600	23	60.8	+ 0.5	103	30	34	1	42	0.00	- 1.03	0.00	0.0	0	21	10	0	nw.	F. H. McCullagh.
Lytle Creek	San Bernardino	2,900	1																	W. E. Anderson.
Maddox	Siskiyou	4,258	3	48.4		93	30	17	2†	63	0.50		0.19	0.0	4	11	13	7	nw.	Butte Valley L'd Co.
Madelina	Lassen	5,270	1	54.3		93	31	23	2	59	0.28		0.24	2.0	3	22	3	6	w.	J. H. Williams.
Magalia	Butte	2,321	6	63.1		102	30	30	3	45	0.44		0.22	0.0	2	25	1	5	se.	Butte County R. R. Co.
Mammoth Tank	Imperial	257	32	82.0	+ 1.6	119	30	55	20	45	0.00	- 0.02	0.00	0.0	0	31	0	0	w.	Southern Pacific Co.
Marysville	Yuba	67	39	68.6	- 0.2	105	29	41	4	39	0.00	- 0.87	0.00	0.0	0	28	0	3	s.	Do.
Mecca	Riverside	- 185	4	82.5		116	30	52	4	43	0.00		0.00	0.0	0	31	0	0	se.	A. Lunsted.
Menlo Park	San Mateo	64	32	64.8	+ 2.7	101	30	44	5		0.00	- 0.55	0.00	0.0	0	29	0	2	nw.	Southern Pacific Co.
Merced	Merced	173	36																	Santa Fe Co.
Mill Creek (1)	Amador	3	3	58.4		99	17	36	1†	52	0.25		0.09	0.0	4	24	3	4	ne.	Cal. Gas & Electric Co.
Milton (near)	Calaveras	669	19	67.6	+ 3.0	105	30	43	1†	43	0.23	- 1.26	0.23	0.0	1	25	6	0	nw.	J. H. Southwick.
Modesto	Stanislaus	90	38	67.0	+ 2.4	100	30†	45	4		0.00	- 0.47	0.00	0.0	0	29	0	2		Southern Pacific Co.
Mojave	Kern	2,751	33																	Do.
Mokelumne Hill	Calaveras	1,550	17	65.4	+ 6.9	101	30	38	4	34	0.19	- 1.50	0.10	0.0	3	10	16	5		C. E. Prindle.
Mono Ranch	Ventura	3,210	4	60.2		96	30	30	4†	41	0.00		0.00	0.0	0	28	2	1	w.	H. Lathrop.
Montague	Siskiyou	2,450	22																	G. H. Chambers.
Monterey	Monterey	15	45	66.1	+ 7.8	82	20†	58	1†		0.00	- 0.49	0.00	0.0	0	31	0	0	ne.	Southern Pacific Co.
Monterio	Kern	4,500	11	61.4	+ 3.5	100	30†	34	3	40	0.05	- 1.57	0.05	0.0	1	26	3	2	nw.	John C. Knecht.
Monumental	Del Norte		5	55.5		93	30	32	2†	40	3.19		0.80	2.0	8	21	8	2		G. F. Morgan.
Mount Tamalpais	Marin	2,375	11	59.0	+ 5.3	92	30	37	3	29	0.23	- 0.69	0.20	0.0	3	15	12	4	nw.	U. S. Weather Bureau.
Napa City	Napa	20	33	61.4	+ 1.5	103	30	37	1†	51	0.05	- 0.86	0.03	0.0	2	21	7	3	s.	Thomas Hull.
Napa (S. H.)	do	60	32	63.8	+ 3.9	104	30	41	1†	46	0.00	- 1.07	0.00	0.0	0	15	13	3	sw.	W. H. Martin.
Needles	San Bernardino	477	18	84.6	+ 4.4	118	29	55	7	44	0.00	- 0.11	0.00	0.0	0	31	0	0	w.	Santa Fe Co.
Nellie	San Diego	5,350	1	63.6		94	31	32	4†	43	0.00		0.00	0.0	0					C. J. Bailey.
Nevada City	Nevada	2,580	18	61.6	+ 6.0	101	30	29	4	57	0.27	- 1.95	0.17	0.0	3	24	0	7	sw.	S. W. Marsh.
Newcastle	Placer	970	17	76.0	+ 11.3	114	30†	41	1†	49	0.16	- 1.50	0.12	0.0	2	26	4	1	s.	George D. Kellogg.
Newhall	Los Angeles	1,200	33	67.9	+ 3.8	109	30†	50	4†		0.00	- 0.51	0.00	0.0	0	30	0	1	se.	Southern Pacific Co.
Newman	Stanislaus	91	21	73.0†	+ 2.3	106†	31	50†	31	56†	0.00	- 0.66	0.00	0.0	0	27	0	4	n.	E. S. Wangerheim.
Nimshew	Butte	2,500	6	62.0		97	30	32	4	44	0.51		0.31	0.0	2	28	0	3		Cal. Gas & Electric Co.
North Bloomfield	Nevada	3,200	13																	W. G. Shand.
North Fork	Madera	3,000	6																	G. H. Shinn.
Oakdale	Stanislaus	156	16	68.8	+ 3.9	108	31	49	5		0.06	- 0.80	0.06	0.0	1	24	5	2	nw.	Southern Pacific Co.
Oakland	Alameda	36	34	62.0	+ 3.9	93	30	38	4	35	0.02	- 0.93	0.01	0.0	2	18	9	4	w.	Chabot Observatory.
Oceanside	San Diego	900	4	66.6		79	26	46	4	26	T.		T.	0.0	0	2	27	2	w.	H. D. Brodie.
Ojai Valley	Ventura	900	4	62.8		102	31	33	4	52	0.00		0.00	0.0	0	26	4	1	sw.	W. H. Duncan.
Orland	Glenn	254	28	70.7†	+ 0.3	110†	30	38†	3	41†	0.17	- 0.81	0.11	0.0	2	27	4	0	n.	W. W. Patch.
Orleans	Humboldt	330	7	69.7	+ 5.3	109	31	44	5	52	0.98		0.46	0.0	5	22	4	5		Fred T. Hale.
Orville (near)	Butte	250	26	70.9	+ 3.7	107	29†	41	5	42	T.	- 1.62	T.	0.0	0	28	1	2	s.	E. D. Fairchild.
Palermo	do	213	19	68.6	+ 3.0	107	31	37	4	50	T.	- 1.46	T.	0.0	0	22	7	2	s.	Miss Hettie Bonlt.
Palm Springs	Riverside	584	21	81.5	+ 0.4	118	29†	58	4		0.00	- 0.02	0.00	0.0	0	19	11	1	w.	Southern Pacific Co.
Pasadena	Los Angeles	827	20	65.4	+ 1.8	96	31	43	6	41	0.00	- 0.43	0.00	0.0	0	28	1	2	sw.	E. R. Sorver.
Paso Robles	San Luis Obispo	800	23	63.5	+ 1.6	110	31	30	4	58	0.00	- 0.55	0.00	0.0	0	29	2	0	nw.	Dr. F. W. Sawyer.
Peachland	Sonoma	190	14	60.6	+ 1.0	97	29†	35	5	53	0.15	- 1.78	0.14	0.0	2	24	4	3	sw.	E. H. Parnell.
Penstock Camp	Tuolumne	3,750	3	64.6		98	31	33	4	30	0.15		0.10	0.0	2	24	6	1		Tuolumne W. P. Co.
Placerville	El Dorado	1,875	21								0.10	- 2.35	0.10	0.0	1					A. Baring-Gould.
Point Lobos	San Francisco	250	17	57.4	+ 3.5	86	30	47	4	28	0.04	- 0.76	0.02	0.0	2	11	10	10	nw.	John Hyslop.
Point Reyes	Marin	490	18	53.5	+ 1.9	75	30	45	3	27	0.06	- 1.48	0.06	0.0	2	11	8	12	nw.	U. S. Weather Bureau.
Porterville	Tulare	464	21	70.4	+ 2.8	109	31	40	5	46	0.00	- 0.53	0.00	0.0	0	30	1	0		Harry E. Cowie.
Quincy	Plumas	3,400	15	57.0	+ 2.7	94	31	25	20	54	0.06	- 2.42	0.04	0.0	2	26	4	1	sw.	D. N. Rogers.
Red Bluff	Tehama	307	33	70.0	+ 3.5	106	30	43	3	36	0.74	- 0.59	0.65	0.0	3	22	5	4	se.	U. S. Weather Bureau.
Redding	Shasta	552	35	70.3	+ 3.1	104	30	44	4	35	0.68	- 1.51	0.27	0.0	4	21	7	3	n.	L. F. Bassett.
Redlands	San Bernardino	1,352	17	67.6	+ 1.8	105	31	40	5	44	0.00	- 0.76	0.00	0.0	0	19	8	4	w.	Paul W. Moore.
Redley	Fresno	347	10	71.0	+ 0.2	112	31	40	5	45	0.00	- 0.73	0.00	0.0	0	31	0	0	n.	Santa Fe Co.
Rialto (near)	San Bernardino	2,250	4	66.7		100	31	44	4	34	T.		T.	0.0	0	24	3	4	sw.	So. California Edison Co.
Riverside	Riverside	851	28	67.0	+ 1.8	103	31	39	5	47	0.00	- 0.38	0.00	0.0	0	24	7	0	w.	C. W. Barton.
Rocklin	Placer	249	39	67.8	0.0	107	30	40	1†	45	0.28	- 0.75	0.28	0.0	1	24	0	7	se.	Southern Pacific Co.
Rohnerville	Humboldt	75	7	56.6		85	16	38	15†	47	0.73		0.31	0.0	3	15	11	5	n.	Dr. R. Callahan.
Sacramento (1)	Sacramento	71	33	65.8	+ 2.9	103	30	44	4	41	0.03	- 0.93	0.03	0.0	1	26	4	1	s.	U. S. Weather Bureau.
Sacramento (2)	do	35	57	65.8	+ 1.6	100	30	42	5	40	0.08	- 0.76	0.08	0.0	1	26	5	0	s.	S. H. Gerrish.
St. Helena	Napa	255	2	63.8		106	29	35	4	62	0.19		0.19	0.0	1					

TABLE 1.—Climatological data for May, 1910. District No. 11—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Number of rainy days, .01 inch or more.	Sky.			Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.		Total snowfall unmelted.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
California—Cont'd.																				
Summit.....	Placer.....	7,017	37	51.9	+ 9.3	85	31	20	4	39	0.53	- 1.61	0.40	4.0	2	28	1	2	w.	Southern Pacific Co.
Susanville.....	Lassen.....	4,175	21	58.6	+ 2.7	95	31	27	2	50	T.	- 1.75	T.	0.0	0	18	13	0	sw.	James Branham.
Tamarack.....	Alpine.....	8,000	4	41.4		81	30	6	5	46	1.54		1.28	14.0	2	22	7	2	sw.	William Bennett.
Tehachapi.....	Kern.....	3,964	33	74.9	+15.7	99	27	51	8		0.00	- 0.40	0.00	0.0	0					Southern Pacific Co.
Tehama.....	Tehama.....	220	39	82.1	+13.2	106	31	60	4		0.10	- 0.75	0.10	0.0	1	23	1	7	s.	Do.
Three Rivers.....	Tulare.....	870		68.0		104	30†	39	5	43	0.08		0.08	0.0	1	22	9	0	sw.	E. D. Barton.
Towle.....	Placer.....	3,704	24	58.8	+ 1.3	96	30	31	4†	39	0.50	- 2.36	0.23	0.0	3	28	0	3	n.	Southern Pacific Co.
Tracy.....	San Joaquin.....	64	30	70.1	+ 1.0	103	30	48	3		0.00	- 0.55	0.00	0.0	0	26	3	2	nw.	Do.
Ukiah.....	Mendocino.....	620	17	69.4	+ 9.0	104	30†	37	5	54	0.37	- 0.91	0.17	0.0	3	19	8	4	nw.	Dr. George McGowen.
Upland.....	San Bernardino.....	1,750	13	63.7	+ 4.0	98	31	37	5†	41	0.00	- 1.33	0.00	0.0	0	23	7	1	w.	A. P. Harwood.
Upper Lake.....	Lake.....	1,350	25	63.4	+ 3.6	102	30	38	5	47	0.16	- 1.09	0.12	0.0	3	28	0	3	nw.	C. M. Hammond.
Vacaville.....	Solano.....	175	22	66.0	+ 0.9	109	30	35	4†	53	0.03	- 1.41	0.03	0.0	1	23	8	0	sw.	G. O. Coburn.
Valley Springs.....	Calaveras.....	673	21	69.8	+ 4.0	108	30	53	4		0.24	- 1.26	0.24	0.0	1	24	6	1	nw.	Southern Pacific Co.
Visalia.....	Tulare.....	334	22																	Santa Fe Co.
Warner Springs.....	San Diego.....	3,165	2	63.8		100	31	33	4	42	0.00									Mrs. E. F. Sanford.
Wasco.....	Kern.....	336	10	68.8	+ 0.4	109	31	42	3	48	0.00	- 0.37	0.00	0.0	0	29	0	2		Santa Fe Co.
Watsonville.....	Santa Cruz.....	23	14	62.8	+ 4.1	93	30	48	2	23	0.04	- 0.62	0.04	0.0	1	10	17	4	sw.	Spreckels Sugar Co.
Westley.....	Stanislaus.....	90	21	73.8	+ 3.2	105	30†	51	1		0.00	- 0.66	0.00	0.0	0	30	0	1	n.	Southern Pacific Co.
Wheatland.....	Yuba.....	84	23	67.6	+ 3.2	102	31	40	5	44	0.09	- 1.41	0.08	0.0	2	22	4	5	s.	Wm. Lumbard.
Willows.....	Glenn.....	136	31	68.5	0.0	104	30	37	4	39	0.09	- 0.63	0.08	0.0	2	22	3	6	s.	M. T. Harrington, Jr.
Yosemite.....	Mariposa.....	3,945	6	59.4		97	30	27	5	54	0.55		0.19	0.5	5	24	6	1	sw.	C. W. Tucker.

- * b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
 † Precipitation included in that of the next measurement.
 ** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.
 ‡ Also on other dates.
 § Separate dates of falls not recorded.
 ¶ Data are from standard instruments not supplied by the U. S. Weather Bureau.
 || Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.
 ||| Estimated by observer.
 ||| Precipitation for the 24 hours ending on the morning when it is measured.
 T. Precipitation is less than 0.01 inch rain or melted snow.

[illegible]

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2.—Daily precipitation for May, 1910. District No. 11—Continued.

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
California—Cont'd.																																	
Gila	Coast		.05	.39	.02					.26	.01															.28	.09	.06					1.11
Glendora	do																																0.60
Glen Ranch	do																																0.60
Glennville	San Joaquin																																T.
Glenwood	Coast					T.																											T.
Gold Run	Sacramento		.20			T.				.20																							0.40
Gonales	Coast																																0.60
Grass Valley	Sacramento			.06	.01					.20																							0.27
Greenville	do			.42	.06					.23	.04																						0.75
Gridley	do									.12																							0.12
Groveland	San Joaquin			T.	T.					T.																							T.
Guinda	Sacramento																																0.05
Hanford	San Joaquin				.05																												0.05
Head Dam	Sacramento				.54					.30																							0.84
Healdsburg	Coast		.02		T.					.01	.03																						0.06
Hearst	do			.20	.50				.10	.20																							1.05
Heber	Desert																										.05						0.00
Helen Mine	Coast										.29																						0.29
Hesperia	Desert																																0.60
Holcomb	Coast																																0.00
Hollister	do																																0.00
Hornbrook	do																																0.00
Hot Springs	San Joaquin				.14																												0.14
Hullville	Coast		.04		.23	.05				.02	.10																						0.44
Idyllwild	do																																0.00
Independence	Owens																																0.00
Indio	Desert																																0.00
Inskip	Sacramento		T.	1.10	T.					.40																							1.50
Ione	San Joaquin			.31																													0.31
Iowa Hill	Sacramento				.07					.10																							0.17
Isabella	San Joaquin			T.																													T.
Jacks-ville	do				.06																												0.06
Jamestown	do				.05																												0.05
Jenny Lind	do				.22																												0.22
Johnsville	Mountain Lakes																																
Jolon	Coast																																0.60
Julian	do																																
Kennedy Mine	San Joaquin																																10.23
Kennett	Sacramento			.10						.04																							1.04
Kentfield	Coast																																0.60
Kernville	San Joaquin																																0.60
King City	Coast																																0.60
Knights Landing	Sacramento				T.					.04																							0.04
Knob	do				T.				.13																								0.13
La Grange	San Joaquin																																
Lake Eleanor	do																																
Lakeside	Coast																																
La Porte	Sacramento		.01		.58	.04				.36	.03																						1.62
Lathrop	San Joaquin									T.																							T.
Laurel	Coast																																0.60
Laytonville	do			.34						.30																							0.64
Le Grand	San Joaquin																																0.60
Lemon Cove	do			.05																													0.05
Letter Box	Sacramento																																
Lick Observatory	Coast									.12																							0.12
Livermore	do																																
Lodi	San Joaquin									.02																							0.62
Long Pine	Owens																																0.60
Long Camp	San Joaquin			.29						.18																							0.47
Long Valley	Mountain Lakes			.01						.03																							0.64
Lordsburg	Coast																																0.60
Los Alamos	do																																0.60
Los Angeles	do																																0.60
Los Banos	San Joaquin																																
Los Burros Mine	Coast																																0.60
Los Gatos	do																																0.60
Los Vaqueros	do																																0.60
Low Observatory	do		.02																														0.60
Lytle Creek	do																																0.60
McCloud	Sacramento																																
Medford	Klamath			.19	.02					T.	.19																						0.70
Madeline	Mountain Lakes		T.	.24	.01					.03																	.19						0.28
Margalia	Sacramento			.22						.22																							0.44
Mammoth Tank	Desert																																0.60
Mariposa	San Joaquin									.06																							0.66
Marysville	Sacramento																																0.60
Merca	Desert																																0.60
Melones	San Joaquin				.10					.12																							0.22
Menlo Park	Coast																												</				

TABLE 2.—Daily precipitation for May, 1910. District No. 11—Continued.

[illegible]

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2—Daily precipitation for May, 1910. District No. 11—Continued.

[illegible]

TABLE 3.—Maximum and minimum temperatures at selected stations for May, 1910. District No. 11, California.

Date.	California.																											
	Lakeview, Oreg.		Alturas.		Barstow.		Branscomb.		Brawley.		Colusa.		Eureka.		Fresno.		Independence.		Los Angeles.		Mount Tamalpais.		Nevada City.		Porterville.		Red Bluff.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	70	30	60	31	79	51	60	35	.....	.....	73	59	55	45	74	45	70	43	64	52	56	38	67	32	75	47	76	50
2	72	32	64	26	82	46	59	35	.....	.....	75	52	55	46	77	46	74	48	67	51	57	41	69	35	77	43	72	49
3	75	30	51	29	77	53	48	34	.....	.....	67	52	55	44	70	48	69	44	64	49	46	37	53	35	73	45	57	43
4	74	29	49	30	69	50	57	31	.....	.....	65	48	56	46	68	43	63	36	65	49	51	38	56	29	67	45	60	43
5	69	25	64	36	80	35	68	34	.....	.....	72	52	58	46	79	41	72	33	70	49	62	40	72	30	80	40	72	41
6	75	30	78	30	88	45	74	39	95	51	81	51	65	46	88	48	80	40	75	49	69	52	80	39	88	45	84	50
7	74	29	81	33	95	53	80	42	100	60	86	56	56	48	90	56	85	51	77	53	74	58	88	40	81	53	90	54
8	65	27	83	36	99	54	79	44	103	60	83	63	57	51	92	57	86	54	77	54	69	57	84	44	95	59	88	58
9	74	29	79	37	91	56	66	46	103	64	83	59	70	51	84	58	83	50	76	54	60	49	72	51	89	55	71	57
10	76	30	62	38	88	59	59	45	97	73	73	55	59	53	82	54	82	52	76	56	57	46	71	40	82	53	72	56
11	77	35	73	28	93	50	67	31	98	62	83	58	58	52	83	49	84	54	72	53	66	48	80	35	85	48	84	53
12	72	30	80	31	93	54	69	39	101	60	86	62	56	50	89	58	87	58	72	54	70	54	84	42	87	54	90	57
13	55	29	76	34	95	55	71	36	102	70	89	55	56	51	83	53	85	58	71	52	68	55	84	40	86	53	88	59
14	65	29	74	35	96	60	79	45	103	66	89	60	54	46	91	56	85	54	71	55	77	56	88	42	91	45	87	67
15	60	30	69	30	96	57	81	55	102	63	87	74	55	46	92	58	81	65	72	56	80	60	89	42	94	60	78	65
16	80	30	72	37	79	60	81	59	90	66	87	65	74	46	91	55	72	41	79	56	74	57	81	54	92	57	87	61
17	75	32	80	25	86	43	83	59	94	59	89	65	72	48	93	58	78	43	72	57	73	62	89	46	93	56	91	59
18	74	29	78	35	90	47	75	45	98	65	87	60	53	48	92	57	80	46	69	53	66	48	86	43	92	55	88	56
19	65	25	74	35	91	57	75	38	97	63	81	56	54	47	86	51	82	51	66	53	58	42	80	41	87	52	81	55
20	60	23	78	45	86	57	79	39	89	56	86	55	55	48	81	52	82	53	62	53	45	41	73	40	81	50	76	52
21	72	29	82	34	91	50	78	40	92	55	76	54	55	49	82	50	84	50	68	54	54	41	77	38	84	46	81	52
22	70	30	86	35	95	48	79	40	98	58	82	62	53	49	87	52	87	51	73	52	69	51	85	38	87	52	87	55
23	69	27	89	37	99	58	80	40	103	60	87	66	56	49	95	58	88	53	70	51	73	44	90	48	96	57	90	61
24	65	25	76	40	98	59	61	43	103	66	81	56	63	50	83	54	87	56	69	54	58	42	75	46	80	54	76	54
25	64	29	66	43	90	62	70	43	98	67	79	61	61	50	82	57	86	62	71	53	59	47	75	46	84	52	81	59
26	61	20	77	40	98	59	75	44	104	60	82	60	66	49	88	53	90	55	75	55	64	49	85	40	86	51	83	55
27	59	27	72	50	103	59	76	42	105	64	84	65	57	47	91	61	93	57	76	56	69	51	87	50	92	54	84	66
28	57	20	83	32	103	63	82	44	106	62	92	66	68	43	96	55	94	62	83	57	79	58	99	42	101	55	92	60
29	73	40	91	36	107	62	91	46	112	67	101	68	66	49	104	64	98	60	83	56	87	68	96	46	103	59	100	65
30	80	55	98	37	112	62	97	50	118	75	101	75	61	50	109	67	101	63	80	55	92	79	101	52	106	67	106	71
31	85	59	98	44	111	66	95	50	.....	.....	101	71	60	51	110	72	102	64	82	55	91	75	100	53	109	72	105	71
Mns	70.0	31.1	75.7	35.1	92.2	54.5	74.0	42.4	100.4	62.9	83.5	60.4	59.3	48.2	87.5	54.4	83.5	51.5	72.5	53.4	66.9	51.1	81.2	41.9	87.8	53.1	83.1	56.9

Date.	California.																											
	Redlands.		Sacramento.		San Diego.		San Francisco.		San Jose.		San Luis Obispo.		Santa Barbara.		Santa Rosa.		Siemon.		Stockton.		Summit.		Susanville.		Yosemite.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1	66	52	60	44	60	58	59	48	63	39	59	41	69	49	66	36	60	30	59	43	50	30	63	34	68	30		
2	73	62	68	47	63	56	57	49	67	44	66	41	67	43	67	40	58	31	60	46	50	28	65	27	69	32		
3	68	52	59	49	62	55	56	50	60	45	58	43	68	45	62	44	43	33	58	50	48	28	54	34	60	33		
4	68	45	62	44	61	50	59	48	64	40	60	37	65	45	64	39	48	36	58	44	40	20	49	28	63	30		
5	81	40	71	44	65	46	69	49	76	40	69	37	67	41	73	36	62	38	66	43	45	28	65	35	69	27		
6	88	47	82	49	67	52	66	51	75	43	68	41	75	42	74	39	75	39	78	50	55	34	77	35	74	33		
7	88	48	84	51	68	54	68	51	81	45	84	47	76	49	78	39	80	41	84	52	68	36	81	42	80	35		
8	82	52	78	51	72	54	61	50	74	47	75	48	75	54	70	45	78	50	83	52	70	46	83	47	77	40		
9	83	53	71	56	75	55	68	51	77	53	78	48	88	53	70	48	70	41	78	58	73	38	68	51	75	42		
10	82	54	71	53	72	58	63	54	70	49	70	52	83	30	68	53	52	35	76	52	65	35	66	43	73	38		
11	88	49	81	48	68	55	69	51	74	47	76	50	73	50	78	40	70	36	78	47	65	30	74	34	76	36		
12	88	49	83	51	65	58	64	50	74	45	75	47	71	48	79	40	72	38	83	52	72	38	80	41	81	37		
13	82	54	84	52	65	57	66	50	71	45	69	42	64	50	83	42	72	38	80	53	68	37	80	43	78	39		
14	80	51	86	55	65	58	70	51	83	44	72	40	65	47	88	45	71	37	90	56	69	38	78	44	84	39		
15	84	50	81	68	63	58	87	55	91	49	85	46	65	50	93	46	74	29	88	58	68	39	68	41	82	41		
16	90	52	87	62	65	59	75	54	86	56	72	50	70	53	87	67	72	36	89	56	55	29	67	40	80	45		
17	84	50	90	56	67	50	63	51	80	49	67	48	70	55	80	42	73	35	89	55	67	36	78	33	80	37		
18	82	49	75	51	66	57	57	51	70	55	67	51	64	50	65	30	76	38	74	52	69	38	77	44	82	42		
19	77	45	74	50	63	58	59	52	71	53	62	51	68	47	66	50	77	37	67	49	65	36	75	43	80	42		
20	65	49	67	50	62	57	57	51	71	52	62	52	62	45	61	49	71	38	68	46	65	39	79	43	82	40		
21	76	53	69	48	63	56	57	50	65	52	63	51	67	45	66	48	78	41	68	46	70	37	82	45	86	39		
22	84	53	81	49	67	58	63	51	74	52	80	50	68	46	76	41	81	43	82	49	72	41	84	46	85	40		
23	87	48	84	52	65	59	61	49	74	52	68	49	64	53	77	49	78	42	85	53	76	47	86	45	90	38		
24	84	49	72	50	65	58	60	50	69	54	63	50	66	54	66	50	78	38	70	50	70	47	76	51	89	39		
25	78	51	76	55	64	57	60	54	73	55	67	48	68	51	72	53	78	39	68	57	64	39	73	47	88	37		
26	91	49	83	52	66	57	64	54	75	55	81	51	71	52	75	47	68	36	80	51	70	35	79	43	90	39		
27	97	54	81	56	69	56	64	53	76	49	86	56	75	53	78	49	78	38	82	54	69	45	74	51	91	40		
28	99	57	89	55	66	56	76	53	84	45	97	60	78	54	91	43	79	37	93	56	77	38	83	40	90	41		
29	100	57	97	61	68	56	88	58	94	50	95	61	78	52	98	50	80	40	100	60	78	46	91	41	96	42		
30	101	58	103	62	70	56	90	55	102	54	84	54	72	54	100	52	99	51	102	66	81	50	94	48	97	43		
31	105	61	100	67	69	56	68	53	90	53	80	52	76	55	87	46	96	48	100	66	85	51	95	50	94	40		
Means.....	83.9	51.4	79.3	52.8	66.1	56.1	69.5	51.5	75.9	48.7	72.8	48.2	70.6	49.5	76.1	45.6	72.5	38.4	78.6	52.3	66.4	37.4	75.6	41.6	81.0	37.9		

Climatological Data for May, 1910.
DISTRICT No. 12, COLUMBIA VALLEY.

EDWARD A. BEALA, District Editor.

GENERAL SUMMARY.

May was mild and dry and it was the third consecutive month since last winter with an excess in temperature and a deficiency in precipitation. Consequently the season is further advanced than usual, which fact is confirmed by the behavior of the annual rise in the Columbia River. This rise is almost wholly due to the melting of snow in the mountains, the rate of the melting depending largely upon temperature and sunshine, which are the same factors that contributed so largely to the rapid advancement in plant growth this year. The average time of the beginning of the annual rise in the Columbia River is May 19, and the average time the crest reaches the lower portion of the stream is June 11, while this year the annual rise began the latter part of April and the crest had reached the lower portion of the stream on May 15, 27 days earlier than usual. During the last half of the month the Columbia River fell slowly and by the 31st it had reached a stage that caused scarcely any inconvenience.

The rainfall, although deficient, fell opportunely and there were no long dry periods to check the growth of vegetation, except in a few of the dry farming sections where the crops needed more rain and were reported to be in poor condition at the end of the month. Some fruit was damaged by frosts on the 14th and 15th, but the crop as a whole escaped serious injury. The number of fruit growers who use protective measures during frosty nights is constantly increasing in this district, and the crops in many commercial orchards were saved by means of fires which raised the temperature through direct heating of the air as much as 8° or 10°.

Although quite a number of hailstorms occurred the damage done by them was insignificant.

TEMPERATURE.

The mean temperature, as determined from the records of 234 stations, was 56.6°, and it was above the normal in practically all sections, especially in central Idaho, Oregon, and central Washington. The mean temperature in Oregon was the highest recorded since 1897, and in Idaho since 1901. The greatest departures above the seasonal average were 5.5° in the upper Snake River Valley in Idaho, 4.6° in the highlands of eastern Oregon, 4.0° and over in the Columbia River Valley, in central Washington, and northern Oregon, and 3.6° to 4.2° in the Willamette and the Rogue River Valleys in western Oregon. The mean temperatures were slightly below the normal near the mouth of the Columbia River, and in northwestern Washington on the Strait of Juan de Fuca. The least variations from normal temperatures for May were along the coast and Puget Sound regions, and in the elevated sections of the eastern portion of the district.

The warmest sections were in the bottom lands of the Snake River, along the central portion of its course, where mean temperatures of 60° to 64° occurred, in the Columbia Valley, from the International boundary to the gorge, in the Cascade Mountains, where the mean temperatures were 59° to 67°, in the lower Willamette Valley and in the upper valleys of the Umpqua and the Rogue rivers in western Oregon with mean temperatures of 60° to 61°, while temperatures of 59° and over, occurred in the Valley of the Clearwater River in north-central Idaho. The coolest sections were in the higher elevations of the interior and along the coasts.

There were 3 quite marked, though short, cold periods; the first 3 days of the month, the 15th, 16th, and 17th, and the 20th and 21st, with a delay in the occurrence in western Mon-

tana of the last cold spell until the 26th. The lowest temperatures occurred generally during the first portion of the first decade, or the middle portion of the second decade, and frost conditions obtained generally over the eastern part of the district at these times.

The highest mean temperature was 67.2° at Blalock, Oreg., in the Columbia River drainage basin, at an elevation of 237 feet; and the lowest was 44.0° at Musick, Oreg., on the western slope of the Cascade Mountains, at an elevation of 5,000 feet. The highest recorded temperature was 107° at Garnet, Idaho, in the middle Snake drainage basin, at an elevation of 2,575 feet, on the 31st, and the lowest was 14° at Range, Oreg., in the Blue Mountains, at an elevation of 3,500 feet, on the 4th.

PRECIPITATION.

The average precipitation, as determined from the records of 333 stations, was 1.68 inch, which is below the normal. The monthly amounts were generally much less than the average, although at Cascade Locks and at Prineville, Oreg., in the Columbia and the Deschutes valleys, respectively, the rainfall exceeded the normal by more than 1 inch. The greatest deficiencies occurred on the western slopes of the Coast Range of mountains in the coast drainage area, in eastern Washington, near the headwaters of the branches of the Columbia in western Montana, and near the headwaters of the Snake River in southeastern Idaho and western Wyoming; in the sections mentioned the deficiencies were more than 1 inch, and in localities along the coast in western Oregon the deficiencies ranged between 2.44 inches and 3.41 inches, according to the reports from 6 stations.

There were 3 distinct precipitation periods: The 1st to 5th, 9th to 14th, and 24th to 29th, except in Montana where the rainless periods were of short duration, separating 5 rainy periods of 1 to 5 days each. In all sections the moisture was so well distributed throughout the month that it was of the greatest possible value. Very little snow fell, except at high altitudes.

The greatest monthly precipitation was 6.10 inches at Snowshoe, Mont., in the Kootenai drainage basin, at an elevation of 4,500 feet, and none occurred at Ephrata, Wash., in the Columbia basin, at an elevation of 1,265 feet. The greatest 24-hour rainfall was 2.30 inches at Snowshoe, Mont., on the 10th. Other heavy 24-hour falls of 1.50 inch, or more, were: 1.50 at Roseburg, Oreg., on the 9th and 10th; 1.58 at Culdesac, Idaho, on the 27th; 1.62 at Baker, Cedar River, and Snoqualmie Falls, Wash., on the 10th; 1.75 at Pompeii, Oreg., on the 3d; 1.76 at Granite Falls, and Sedro-Woolley, Wash., on the 10th; 1.77 at La Center, Wash., 1.80 at Mount Pleasant, Wash., 1.90 at Mountain Park, Oreg., and 2.14 at Cascade Locks, Oreg., all on the 3d.

THE RIVERS.

The rising stages of the rivers noted during the latter portion of April received a slight check early in May on account of lower temperatures temporarily arresting the rapid melting of the mountain snows. This check was, however, only temporary and the quite general rains of the first decade again increased the flow of water in the streams, culminating in the highest stages of the month generally from the 11th to the 16th. The lowest stages were generally recorded either during the first week or near the end of the month. The latter half of the month showed that the waters were generally receding, though there was a slight rise during the first or the middle portion of the last week, due to a generally rainy period at that time.

The Columbia.—The stages on the 1st of the month were slightly lower than those at the close, and the mean stages, as compared with the records of previous years, ranged between 3.4 feet above the normal at Celilo and 9.3 feet above at Wenatchee. The upper Columbia averaged 6.2 feet higher than the normal, the lower Columbia 4.3 feet higher, or an average for the whole river of 5.0 feet above the normal. At Umatilla only once, and at The Dalles only twice, in the past 16 years has the mean monthly stage exceeded that of the present month, while at Wenatchee and at Newport with 7 years of record each, and at Bonners Ferry with a 6 years' record, the water has never been higher during May. The mean stages were uniformly higher than for April, being 5.7 feet higher at Vancouver, 5.0 feet higher at Umatilla, and 14.9 feet higher at Wenatchee. At Vancouver the river rose from 16.2 feet on the 7th to 17.5 feet on the 31st, at Umatilla from 16.6 feet on the 5th to 17.9 feet on the 31st, at Wenatchee from 27.6 feet on the 1st to 33.8 feet on the 31st, and at Northport from 13.7 feet on the 1st to 22.8 feet on the 31st.

The decreasing of the waters at the close of the month apparently marked the end of the so-called "June rise" of the Columbia, which every year is looked forward to with more or less apprehension on the part of merchants and boatmen, as well as by ranchmen having the bottom lands under cultivation. Navigation was uninterrupted, except during that portion of the month from the 12th to the 18th, inclusive, when the highest water occurred in the lower Columbia. During the period mentioned full-freighted boats could not ascend against the strong current at Cascade Locks, and were compelled to return to Portland and discharge a portion of their cargoes before passing the locks. On account of natural obstructions the Columbia River is not navigable as far up as the International boundary, though it is quite probable that the greater portion of these obstructions will at some time in the future be removed. Rapids at several points above the junction of the Snake and the Columbia prevent through navigation of the latter river from Priest Rapids nearly to Wenatchee. Steamboats operate on this river throughout the year between Wenatchee and Brewster, a distance of 76 miles, daily, and it is also possible for them to proceed to Bridgeport, 12 miles above Brewster, which they do when the volume of business warrants. During the months of May and June it is possible for boats to navigate the Okanogan River as far as Riverside, 57 miles, and during the month just closed 3 trips were made to that port, while the twice-a-week service to Okanogan, 37 miles, and to Omak, 42 miles, was maintained.

The Snake.—The mean of the daily stages at the several stations for the month averaged 0.2 foot below those for April, but was 0.8 foot above the normal for May. The water was highest on the 1st, or on the 11th, and the lowest on the 30th or the 31st. At Lewiston the river rose from 13.4 feet on the 1st to 14.7 feet on the 11th, falling again to 10.5 feet at the close of the month. At Weiser, there was a steady fall from 10.3 feet on the 1st to 7.1 feet on the 30th. The Snake River was open to navigation throughout the month as far as Asotin, Idaho.

The Willamette.—The highest water in the Willamette occurred on the 11th and 12th, except at Portland, where the stage was influenced by backwater from the rising Columbia, and where the highest stage recorded was 19.1 feet on the 15th and 16th, this being 4.1 feet above the flood stage. As timely warnings of the daily stages were issued from the Portland office, the damage resulting from the high water must have been very slight, if any.

At Jefferson, on the Santiam, the highest stage was reached on the 2d, and at McMinnville, on the Yamhill, on the 4th; in these cases the height of the water was influenced by local rains during the first days of the month. With the exception of Portland, which as before stated, recorded higher water on account of the backwater from the Columbia, the mean stages

for the month were less than the normal, and were as follows: Eugene, -0.2 foot; Albany, -1.4 foot; Salem, -1.9 foot; Jefferson, -0.6 foot; McMinnville, -0.7 foot; and Estacada, -0.3 foot. At Portland the combined influences of the Willamette and the Columbia caused the river to reach a stage of 19.1 feet, which is 3.7 feet above the normal for May. At no place along the Willamette, Portland excepted, was the stage during May as high as those of April.

During the latter portion of the month navigation on the Willamette was interrupted on account of gravel bars which had formed in the bed of the river, and the falling water would not permit the ordinary traffic to Salem, to which point regular trips throughout the year are generally made, when the river bed is in normal condition. The month closed with stationary or falling conditions in the rivers at all stations.

MISCELLANEOUS PHENOMENA.

The prevailing winds were from the southwest. There was an excess of sunshine over the entire district. The percentage of possible sunshine was 73 at Spokane, 59 at Seattle and 63 at Portland. Frosts were general on the 14th and 15th. Thunderstorms and hail were reported from many stations during the latter part of the month. The highest reported wind velocity was 64 miles from the southeast at North Head, Wash., on the 26th.

PROPOSED IRRIGATION OF THE HORSE HEAVEN COUNTRY.

The land which it is proposed to irrigate lies between the Yakima and Columbia rivers, though wholly on the watershed of the Columbia. The Klickitat Irrigation and Power Company, which has made extensive surveys and plans for the work, proposes to get the water from the big Klickitat River. This river drains a large watershed on the east and north sides of Mount Adams. About 100 miles of ditch will be necessary between the intake and the point where the water begins to be distributed. Along the proposed ditch are numerous sites for reservoirs for impounding and conserving the water of the streams crossing the course of the ditch. Several hundred thousand acres of land are tributary. The land is said to lie unusually well for irrigation.

The land owners in this region have organized themselves into an association to cooperate with the irrigation company and facilitate the enterprise.—L. C. F.

DUST SHOWER IN NORTHERN IDAHO.

The daily papers report a fall of "a sulphurous looking substance" in connection with showers occurring in Nez Perce and other northern Idaho counties on May 25. The official in charge of the local office of the Weather Bureau at Lewiston has this to say regarding it:

The "sulphurous looking substance" was evidently nothing more than pollen from wild mustard, great quantities of which were in full bloom in this valley at the time the phenomenon occurred. The pollen was doubtless scattered broadcast by a brisk to high wind and was then collected by showers that immediately followed the wind and carried into pools where it remained about the edges after the water had disappeared. This was the conclusion I came to after carefully examining a sample of the deposit and comparing it with mustard pollen.

THE IDAHO IRRIGATION PROJECT.

By EDWARD L. WELLS, Section Director.

The Idaho Irrigation Company is the name of a corporation that is undertaking the reclamation of about 40,000 acres of land in Lincoln County, Idaho, in the vicinity of Richfield, Gooding, Shoshone, and Dietrich.

The water is obtained from the Wood River, sometimes known as the Malad, and its tributaries, which have their sources in some of the highest mountains in the State. The

water will be impounded by a rock-fill dam 135 feet in height, 782 feet thick at the base, up and down stream, and 700 feet long across the top. This dam forms a lake 11 miles long, covering an area of 3,300 acres, and storing 205,000 acre-feet of water. This storage is provided to guard against shortage of water in the latter part of the season, the natural flow of the stream in the spring and early summer being sufficient for the needs of the tract covered. The water is drawn from this reservoir through a tunnel driven under a rocky hill near the dam. The land to be irrigated lies in the great Snake River plain, the soil is rich and is of volcanic origin. The elevation of the tract ranges from about 3,500 to 4,500 feet.

TABLE 1.—Climatological data for May, 1910. District No. 12, Columbia Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelting.	Number of rainy days, 0.1 inch or more.	Number of clear days.	Number of partly cloudy days.		
Montana.																			
Anaconda.	Deer Lodge	5,300	9	51.1		81	31	24	2	39	1.78		0.60	T.	8				C. D. Demond.
Bison.	Powell	7,240									2.91		0.90	15.0	10	13	12	6	C. H. Anderson.
Columbia Falls.	Flathead	3,100	16	53.2	+ 2.0	85	24	25	16	46	4.14	+ 0.88	1.02	0.0	7	11	12	8	Mrs. I. M. Kennedy.
Comstock.	Ravalli		2	56.4		86	31	25	16	41	1.19		0.38	0.0	7	17	8	6	Hiram Platt.
Darby.	do.	3,825	1																W. A. Kerlee.
Dayton.	Flathead	2,800	6	54.0		85	24	24	1	46	1.78		1.00		7				Charles Frost.
East Anaconda.	Deer Lodge	5,500	3	52.4		81	31	28	1	39	1.78		0.64	T.	9	16	7	8	C. D. Demond.
Fortine.	Lincoln	2,975	4	52.7		88	9	19	1	53	1.66		0.58		10	13	8	10	Mike Petery.
Hamilton.	Ravalli	3,575	7																J. B. Currie.
Hat Creek.	Powell	6,000									2.22		0.60	9.2	8	15	8	8	M. K. Landreth.
Kalispell.	Flathead	2,965	11	54.8	+ 3.8	81	24	29	1	39	1.67	- 0.36	0.73	0.0	9	15	10	6	U. S. Weather Bureau.
Lost Creek.	Deer Lodge	5,200									1.57		0.61	0.0	3	13	7	11	Frank Hennault.
McGinnis Meadows.	Lincoln			52.2		85	23	21	1	47	2.33		0.83	T.	6	8	13	10	H. L. Beebe.
Missoula.	Missoula	3,225	32	55.8	+ 2.0	89	31	26	16	48	1.92	- 0.21	0.65		8				U. S. Weather Bureau.
Ophir.	Powell	8,800									2.76		0.97	8.5	7	16	10	5	E. S. Wilton.
Ovando.	do.	4,207	10	47.7	0.0	88	31	20	1	53	2.76	- 1.77	0.32	0.0	4	0	31	0	S. B. Muchmore.
Philipsburg.	Granite	5,275	7	52.1		88	31	23	1	50	2.10		0.84	2.0	5	20	6	4	G. T. Bramble.
Plains.	Sanders	2,475	12	54.8	+ 2.8	89	23	28	1	47	0.90	- 0.92	0.60	0.0	2	18	0	13	M. H. Pierce.
Pleasant Valley.	Flathead	3,500	3	52.2		83	31	22	1	45	2.05		0.76	0.5	10	13	12	6	A. D. Stillman.
Polson.	do.	2,920	2	57.4		85	23	31	16	37	1.30		0.62	0.0	8				F. P. Brown.
St. Ignatius.	Missoula	2,700	4	55.2		86	24	26	1	45	2.00		0.56	0.2	12	16	7	8	U. S. Reclamation Service.
St. Regis.	do.	2,650	2	54.0		90	31	22	1	52	1.85		0.48	0.0	7	6	19	6	R. D. Lee.
Salt Lake.	do.	3,600	6								3.25		1.28	0.0	7	23	1	7	E. K. Tarbox.
Snowshoe.	Lincoln	4,500	4	50.4		80	31	26	1	33	6.10		2.30	1.0	12	8	8	15	J. C. Ritter.
Troy.	do.	1,880	14	56.8	+ 3.0	92	31	28	1	53	1.83	- 0.19	0.60	0.0	7	16	7	8	W. E. Milnor.
Upper Lake McDonald.	Flathead	3,200	2	53.2		83	24	29	3	47	3.03		0.66		11	6	10	12	F. F. Liebig.
Wyoming.																			
Afton.	Uinta	6,200	6	47.7	+ 1.3	83	31	19	17	50	1.29	- 1.65	0.47	0.5	6	20	3	8	A. V. Call.
Alta.	do.	1	1	46.2		82	31	21	17	42	2.54		1.10	4.4	12	13	6	12	Mrs. Lucy Brown.
Bedford.	do.	5,900	10	46.7	+ 0.5	80	31	19	17	44	1.04	- 1.56	0.42	0.0	6	20	4	7	C. G. Heiner.
Snake River.	Yellowstone Park	7,000	4	42.3		79	31	11	2	50	2.60		0.40	15.0	10	16	3	12	U. S. Army.
Nevada.																			
San Jacinto.	Elko			49.1		89	31	22	17	51	1.30		1.27	2.0	2	15	11	5	Moses Jones.
Utah.																			
Standrod.	Boxelder		6	53.6		84	31	27	16	36	0.99		0.63	3.8	5	18	4	9	T. B. Jones.
Idaho.																			
Atlanta.	Elmore	5,500	4																H. Warder Lewis.
Albion.	Cassia		8	54.3		97	31	23	17	57	0.81		0.38	T.	3				G. A. Axline.
Almo.	do.		2								0.74		0.40	0.0	5	21	8	2	Wm. L. Eames.
American Falls.	Oneida	4,341		57.0	+ 3.5	97	31	27	16	53	1.02	- 0.53	0.62	0.0	3				O. H. Barber.
Blackfoot.	Bingham	4,503	15	54.2	+ 0.9	94	31	25	2	55	0.78	- 0.68	0.32	0.0	5	15	12	4	E. A. Dowd.
Blackfoot Dam.	do.		2	47.2		85	31	21	17	50	1.08		0.26	0.0	10	20	4	7	N. W. Irshfeld.
Blanche.	Lincoln		2																Mrs. Belle Hess.
Bock's Ranch.	Elmore	3,500																	William Bock.
Bogus Creek.	Boise	4,200	2								2.32		0.83	T.	7	17	11	3	F. P. Ingraham.
Boise.	Ada	2,770	25	59.8	+ 2.2	98	31	37	20	39	1.14	- 0.15	0.71	0.0	6	20	5	6	U. S. Weather Bureau.
Bonniers Ferry.	Bonner	1,850	4	56.0		90	24	28	1	46	1.82		1.02	0.0	6	10	15	6	W. H. Heideman.
Boulder Mine.	Boise	4,800									2.11		0.56	1.0	7	23	4	4	Patrick Moriarty.
Buhl.	Cassia	3,800	4			102	31				0.55		0.21	0.0	3	16	7	8	H. J. Idema.
Burke.	Shoshone	4,082	3	49.2		83	31	25	1	44	4.38		1.12	T.	10	12	14	5	W. Alvin Hall.
Caldwell.	Canyon	2,372	6	59.8		96	31	35	17	46	0.84		0.33	0.0	6	16	11	4	Prof. Wm. J. Boone.
Camas.	Fremont	4,815	2	53.5		90	31	23	17	50	0.49		0.20	T.	5	10	13	8	Mrs. Edna Faulkner.
Cambridge.	Washington	2,651	13	57.5	+ 1.7	94	31	30	2	50	2.01	+ 0.42	0.62	0.0	8				Chas. H. Shepherd.
Chesterfield.	Bannock	5,424		49.4	+ 0.7	90	31	21	16	60	0.59	- 1.28	0.30	T.	4	15	8	8	Chas. S. West.
Clawson.	Fremont																		E. J. Hopkins.
Cour d'Alene.	Kootenai	2,157									2.00	+ 0.16	1.00	0.0	4	15	8	7	Jos. T. Scott.
Cottonwood Creek.	Boise	4,000									0.90		0.30	0.0	4	18	0	13	Frank Hedrick.
Crawford.	do.	4,300	3																Mrs. Gertrude Kerby.
Culdesac.	Nes Perce	1,520	2	60.0		94	31	32	2	49	4.28		1.58	0.0	9	15	10	6	R. R. Richmond.
Deary.	Latah			53.2		90	31	28	15	45	3.44		0.87	0.0	5	18	9	4	H. M. Call.
Dent.	Nes Perce	1,350	5	59.6		100	31	31	2	56	4.04		1.07	0.0	9	15	11	5	Emil Schuessler.
Driggs.	Fremont	6,097	3	47.4		80	31	21	17	50	1.94		0.71	0.0	7	9	10	12	Walter H. Durrant.
Edie.	do.			48.5		78	30	24	2	42	0.93		0.30	0.0	5	22	5	4	Geo. B. Edie.
Edwardsburg.	Idaho	4,500		47.4		87	31	23	16	52									W. A. Edwards.
Emmett.	Canyon	2,350	4																E. L. Marvin.
Forney.	Lemhi			52.0	+ 3.5	91	31	22	2	55	2.35	+ 0.33	1.00	1.0	9	9	13	sw.	M. B. Merritt.
Garden Valley.	Boise	3,600		56.7		89	23	28	16	48	1.39		0.45	0.0	4	16	11	4	Mrs. Gertrude M. Rom.
Garnett.	Elmore	2,575	11	64.2	+ 1.8	107	31	38	16	59	0.46	- 0.10	0.24	0.0	3	23	6	2	Asa A. Kenison.
Gilbert.	Nes Perce	3,080																	J. B. Loomis.
Glenns Ferry.	Elmore	2,599	2			106	31	28	16	56	0.39		0.33	0.0	3	22	7	2	I. E. Perkins.
Gooding.	Lincoln	3,572		57.4		102	31	29	16	53	0.32		0.15	0.0	3	20	10	1	John Krall, Jr.
Grand Forks.	Shoshone	3,000		50.9		91	31	24	1	56	3.26		0.91	0.0	11	16	9	6	Henry Kottkey.
Grandview.	Owyhee	2,381		60.8		103	31	30	17	56	0.35		0.15	0.0	3	21	7	3	N. G. Massey.
Green Timber.	Fremont																		Otto Stegelmeier.
Grimes Pass.	Boise	5,200									1.61		0.75	0.0	4				Joseph M. Clarke.
Guffey.	Owyhee	2,381	2	64.8		105	31	38	17	47	0.63		0.32	0.0	6	21	9	1	Fred Perry.
Hailey.	Blaine	5,347	6	54.8		91	31	31	5	44	0.80		0.43	T.	4	18	8	5	U. S. Forest Service.
Hotspring.	Owyhee	2,752	5	61.3		103	31	29	3	48	0.82		0.40	0.0	4	19	7	5	J. M. Waterhouse.
Idaho City.	Boise	4,000	10																Mrs. Emma Hammer.
Idaho Falls.	Bingham	4,742	16	57.1	+ 5.5	92	31	25	2	50	0.75	- 0.82	0.60	0.0	2	24	5	2	Dr. T. M. Bridges.
Indian Valley																			

TABLE 1.—Climatological data for May, 1910. District No. 12—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, all or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
Idaho—Cont'd.																				
Milner	Cassia	4,097	7	56.8		98	31	31	16	45	0.47		0.18	0.0	4	18	9	4	nw.	R. A. Hanson.
Moscow	Latah	2,748	18	55.8	+ 2.0	87	31	31	26	34	1.92	- 0.52	0.58	0.0	7	16	7	8	nw.	University of Idaho.
Mountainhome	Elmore	3,150	5	57.4		102	31	27	16	56	0.60		0.56	0.0	3	19	7	5	nw.	Mrs. Ellen Manion.
Murtaugh	Cassia		4	54.8		96	31	26	17	52	0.49		0.24	0.0	3				w.	J. E. Steinour.
Nes Perce	Nes Perce	3,182		53.3		88	24	26	21	46	3.08		0.97	0.0	7	23	0	8		P. Mitchell.
Oakley	Cassia	4,191	17	56.5	+ 2.0	97	31	30	17	43	0.94	- 0.13	0.40	0.0	3	21	7	3	s.	John Adams.
O'Hara Bar	Idaho	1,400		56.7		88	24	34	21	52										U. S. Forest Service.
Orofino	Nes Perce	1,027	5	59.0		93	23	32	2	48	3.89		0.98	0.0	8	18	12	1		Geo. Altender.
Payette	Canyon	2,159	20	59.9	+ 0.3	95	31	32	21	51	0.53	- 0.31	0.30	0.0	6	20	4	7	n.	E. F. Allen.
Pebble	Bannock	5,277		50.4		87	31	20	17	53	0.21		0.10	0.0	4	16	10	5	sw.	Mrs. Fannie Say.
Pierson	Custer	7,000	2								0.66		0.34	0.0	2	21	2	8		David P. Clarke.
Pine	Elmore	4,100																		Mrs. Jennie Potter.
Placerville	Boise	4,200																		James McDewitt.
Pleasant Valley	Ada	3,000	3	58.0		102	31	29	16	48	1.02		0.42	0.0	6	24	1	6	se.	C. E. Friedrich.
Pocatello	Bannock	4,483	11	56.0	+ 0.5	93	31	32	17	43	0.94	- 1.26	0.42	0.1	7	16	11	4	se.	U. S. Weather Bureau.
Pocatello Nursery	do	5,396	3	49.8		88	31	22	21	46	0.92		0.38	0.0	8	19	4	8	sw.	Mrs. Anna M. Wrensted.
Poplar	Bingham		2																	Stanley Bybee.
Porthill	Bonner	1,685	22	55.4	+ 1.4	82	23	30	1	43	1.09	- 0.98	0.50	0.0	4	24	5	2	sw.	H. A. French.
Powers Ranch	Boise	4,300																		Mrs. Mona B. Powers.
Pyle Creek	do	3,100									1.11		0.36	0.0	5	20	1	10	ne.	Walter L. Cole.
Rattlesnake Creek	Elmore	4,400																		Richard M. Green.
Ruby Creek	Boise	4,204	4	56.2		95	31	25	17	50	0.17		0.13	0.0	4	24	4	3	w.	O. A. Hatter.
Rupert	Lincoln	4,540	5			90	31	25	2	51	1.07		0.58	0.2	7	17	7	7	w.	Will Parry.
Salmon	Twin Falls		2	56.2		98	31	31	21	43	0.95		0.45	2.0	7	19	8	4	nw.	E. K. Abbott.
Salmon River Dam	Boise	5,000	2																	Arch M. Gilbert.
Sheep Hill	Lincoln	3,968	2								1.02		0.36	0.0	10	13	10	6	s.	Clifford M. Gardner.
Shoshone	Owyhee	6,280	3																	O. A. Truman.
Silver City	Elmore	5,200																		A. D. Bradfield.
Smith Prairie	Blaine	5,200																		Wm. W. Newell.
Soldier	Fremont		3	52.4		87	31	26	17	48	1.35		0.31	T.	7	16	6	9	sw.	W. W. Leek.
Sugar	Elmore			58.4		99	31	31	16	48	0.53		0.25	0.0	4				sw.	Geo. F. Webb.
Sunnyside	Bingham	4,420	2	54.7		95	31	30	21	53	0.79		0.42	0.0	3	19	8	4	sw.	E. A. Wilmet.
Tilden	Boise	4,300									1.94		0.56	1.0	6	14	10	7		Mrs. W. A. Edwards.
Tripod Mountain	Twin Falls	3,825	5	58.1		98	31	29	21	53	0.52		0.30	0.0	3	15	16	0	w.	Mrs. Verna Paddock.
Vernon	Fremont		13	51.0	+ 2.0	85	31	27	17	42	1.73	0.00	0.60	T.	7	18	9	4	sw.	J. A. Waters.
Wallace	Shoshone	2,728	3	54.9		91	31	29	1	47	3.22		0.86		12				w.	A. M. Slattery.
Wendell	Lincoln	3,400	2	59.3		102	31	28	16	50	0.59		0.28	0.0	3	24	5	2	w.	U. S. Weather Bureau.
Washington.																				
Aberdeen	Chehalis	182	19	55.4	+ 2.7	82	21	35	15	36	3.50	- 0.85	0.67	0.0	11	8	21	2	w.	Carl S. Weatherwax.
Anacortes	Skagit	60	16	54.6		76	31	34	15	38	0.78	- 1.21	0.39	0.0	6	22	8	1		Douglas Allmond.
Baker	do	200	4	57.4		85	22	35	15	40	4.43		1.62	0.0	8	18	2	11		Robt. M. White.
Bellingham	Whatcom	60	15	54.4	+ 0.8	74	17	33	11	35	2.34	- 0.08	0.72	0.0	10	22	6	3		Sanford B. Mayhew.
Blaine	do	53	13	54.1	+ 2.1	76	7	33	11	36	2.80	- 0.15	0.85	0.0	9	14	16	1	sw.	John W. Sheets.
Blewett	Chelan	2,200																		John Burmeister.
Bremerton	Kitap										1.03		0.40	0.0	8					U. S. Navy Yard.
Brewster	Okanogan			62.2		94	31	36	14	41	1.04		1.02	0.0	2	19	9	3	s.	Mrs. H. F. Bertram.
Bumping Lake	Yakima			50.0		89	23	26	41	49			T.		24	0	7			U. S. Reclamation Service.
Cashmere	Chelan										0.35		0.16	0.0	5	19	11	1	nw.	Valley Power Co.
Cedar River	King		3								3.67		1.62	0.0	9	15	3	13		George Landsburg.
Centralia	Lewis	212	17	57.2	+ 2.5	88	31	32	15	51	2.33	- 0.22	0.45	0.0	10	10	19	2	n.	I. S. Turner.
Cheney	Spokane	2,351	11	59.9		93	31	31	16	50	0.70	- 1.37	0.70	0.0	1	18	7	6		Northern Pacific Ry.
Clealum	Kititas	1,930	11	54.6	+ 3.9	92	31	28	16	54	0.80	- 0.17	0.50	0.0	4	21	6	4	sw.	J. A. Balmer.
Clearbrook	Whatcom	140	7	54.8		85	9	28	1	47	4.17		1.43	0.0	8	9	11	11	s.	Geo. Gibbs.
Clearwater	Jefferson	135	14																	A. Ritchie.
Colfax	Whitman	2,300	21	56.5		94	31	26	3	52	1.00	- 0.81	0.40	0.0	4				sw.	W. H. James.
Colville	Stevens	1,635	10	58.0	+ 2.9	94	31	28	11	54	0.73	- 1.18	0.54	0.0	4	20	6	5	sw.	W. L. Sax.
Conconully	Okanogan	2,300	10	56.0		87	31	30	19	43	1.17	- 0.63	1.02	0.0	2	14	6	11	s.	Wm. Baines.
Cowieche	Yakima																			U. S. Reclamation Service.
Crescent	Lincoln	2,250	10																	Otto Wollweber.
Davenport	do	2,450	1	57.5		89	31	31	28	42	0.60		0.48	0.0	3	21	7	3	sw.	W. H. Reed.
Dayton	Columbia	1,700	24	60.2	+ 4.1	92	31	36	15	37	1.02	- 0.89	0.53	0.0	6	18	9	4	sw.	W. W. Hendron.
Detroit	Mason	30	2	57.0		85	31	35	1	43	2.12		0.34	0.0	9	16	10	5	s.	Walter O. Eckert.
Dixie	Walla Walla	5,000	1								2.69		1.05	0.0	10	16	5	10	nw.	T. Z. Andrews.
Duckabush	Jefferson	380	2	56.0		82	31	31	14	45	1.92		0.72	0.0	13	10	15	5	s.	E. J. Finch.
East Sound	San Juan	500	15																	Benj. E. Harrison.
Ellensburg	Kititas	1,571	22	58.6	+ 3.7	95	23	32	16	51	0.16	- 0.52	0.16	0.0	1	23	5	3	nw.	R. Lee Barnes.
Ephrata	Grant	1,265	7	66.0		95	23	35	15	47	0.00		0.00	0.0	0	25	3	3	s.	T. J. Cook.
Forks	Clallam	480	1	57.1		85	21	32	1	44	3.05		0.85	0.0	8	16	7	8	sw.	E. A. Markham.
Fort Simcoe	Yakima	1,427	16	60.8	+ 1.7	98	22	28	15	46	0.61	- 0.13	0.31	0.0	2	23	5	3		Frank C. Hill.
Goat Lake	Shohomish	2,900	1								5.47		1.25	0.0	12					C. M. Mackintosh.
Gold Creek	Yakima	2,600	1								0.60		0.50	0.0	2	18	9	4	w.	John W. Anderson.
Goldendale	Klickitat	1,600	4	59.8		96	23	34	11	51	0.31	- 0.68	0.25	0.0	3	16	6	5	w.	Klickitat Co. Abstract Co.
Granite Falls																				

TABLE 1.—Climatological data for May, 1910. District No. 12—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.
Washington—Cont'd.																			
Moxee	Yakima	1,000	18	62.0	+ 4.0	100	31	31	17	54	0.36	- 0.44	0.17	0.0	5	17	9	5	Henry B. Scudder.
Newport	Stevens	211	8	54.2		88	24	24	1	48	1.53	- 0.10	0.96	0.0	6	19	7	5	Chas. M. Talmadge.
North Head	Pacific	211	8	51.1	- 0.1	61	30	44	15	12	2.29	- 0.10	0.56	0.0	12	7	10	14	U. S. Weather Bureau.
Northport	Stevens	1,950	11	58.8		94	23†	27	1	63	1.12	- 0.92	0.90	0.0	4	20	10	1	John Palm.
North Yakima	Yakima	1,076	1	63.7		96	31	38	16	42	0.35		0.21	0.0	3	21	5	5	Albert Bender.
Nutland	Klickitat		1	63.6		97	31	39	15	39	0.69		0.40	0.0	2				J. R. Shepard.
Odessa	Lincoln	1,540	7	60.6		96	31	30	1	55	0.34		0.20	0.0	2	16	11	4	Wm. U. Neeley.
Olga	San Juan	50	20	53.5	+ 0.7	70	31	37	15	27	1.50	- 0.56	0.68	0.0	9	16	11	4	Cecil S. Willis.
Olympia	Thurston	200	32	56.6	+ 1.9	85	31	33	1†	47	1.67	- 0.97	0.37	0.0	9	16	3	12	M. O'Connor.
Omak	Okanogan		1	60.8		97	31	35	17	53	0.35		0.35	0.0	1				Wm. G. Tait.
Oroville	do	922	1																A. M. Duffield.
Peola	Garfield	5,000	1								1.30		0.49	0.1	9	16*	9*	5*	Samuel Gruell, sr.
Pomeroy	do	1,500	18	59.2	+ 2.0	94	31	34	16†		0.30	- 1.57	0.20	0.0	2	14	11	6	Peter McClung.
Port Crescent	Challam	259	15	48.5	- 0.6	79	21	31	15	34	0.77	- 1.54	0.25	0.0	10	9	21	1	U. S. Weather Bureau.
Port Townsend	Jefferson	80	20	54.6	+ 1.2	75	21	39	1	29	1.05	- 0.84	0.27	0.0	8	19	6	6	Frank Plummer.
Pullman	Whitman	2,550	18	57.4	+ 4.5	90	31	35	2	41	0.52	- 1.33	0.40	0.0	3	17	7	7	State Agricultural College.
Quinalt	Chehalis	300	3	55.8		81	21†	33	15	39	3.23		0.48	0.0	14	13	11	7	A. V. Higley.
Republic	Ferry	2,628	10	54.8	+ 2.9	90	22	24	1	51	0.73		0.40	0.0	6	21	6	4	Geo. B. Stocking.
Rex Creek	Chelan	1,135	3									- 0.54	0.09	0.0	6				James W. Nicol.
Ritzville	Adams	1,825	11								0.23		0.47	0.0	2	16	7	8	Northern Pacific Ry.
Rock Lake	Whitman	1,750	4	59.6†		95*	22†	30*	27	48*	0.55		0.47	0.0	7	16	9	6	P. M. Ramsey.
Rosalie	do	2,425	18	57.4	+ 4.8	87	31	33	15†	37	1.00	- 1.06	0.55	0.0	7	16	9	6	Hans Mumm.
Russells Ranch	Yakima	2,870	1								1.19		0.52	0.0	8	15	9	7	Maggie M. Russell.
Scenic Hot Springs	King	2,021	1																J. V. Prosser.
Seattle	do	123	19	57.0	+ 2.0	77	31	43	15	28	1.88	- 0.44	0.80	0.0	9	11	10	10	U. S. Weather Bureau.
Sedro-Wooley	Skagit	38	13								3.47	+ 0.23	1.76	0.0	10	13	13	3	Mrs. H. L. Devin.
Sixprong	Klickitat	1,240	3	64.2		97	31	37	1	42	0.58		0.36	0.0	3	20	3	8	C. E. Comstock.
Skagit Power Dam	Whatcom	123	3	59.0		91	9	36	1	48	4.20		1.43	0.0	10				Skagit Power Co.
Snohomish	Snohomish	50	16	55.2	+ 0.5	83	31	34	1†	41	2.42	- 0.94	1.10	0.0	11	15	3	13	Warren Dodge.
Snoqualmie Falls	King	667	11	58.7		87	21†	33	1	49	3.18	- 1.34	1.62	0.0	11	22	0	9	O. N. Wiswell.
Snyders Ranch	Okanogan	2,200	1								0.87		0.67	0.0	3	21	9	1	Geo. M. Snyder.
South Bend	Pacific	16	15	54.2	+ 1.0	79	30	36	15	36	3.73	- 1.00	0.80	0.0	13	11	10	10	Miss Winifred Eichner.
Spokane	Spokane	1,943	29	59.4	+ 3.3	89	31	35	1	35	0.88	- 0.74	0.53	0.0	5	6	15	10	U. S. Weather Bureau.
State University	King	170	1	56.3		77	31	41	15	29	2.27		0.85	0.0	7	15	5	11	University of Washington.
Stokes Ranch	Okanogan	2,670	1								1.35		1.15	0.0	2	21	8	2	Amos Stokes.
Sullivan Lake	Stevens	2,700	1																U. S. Forest Service.
Sumner	Pierce	77	2	55.6		82	31	33	1	45	2.74		1.05	0.0	11	13	11	7	H. E. Thompson.
Sunnyside	Yakima	740	15	63.0	+ 4.6	98	31	31	1	52	4.48	- 0.10	0.34	0.0	3	18	10	3	U. S. Reclamation Service.
Tacoma	Pierce	213	24	56.6	+ 2.1	79	31	39	15	33	2.17	- 0.37	0.90	0.0	9	11	12	8	U. S. Weather Bureau.
Tatoosh Island	Challam	86	25	50.4	+ 0.8	61	31	42	1	16	2.34	- 1.75	0.82	0.0	9	7	10	14	Do.
Tieton	Yakima	2,000	1	56.6		92	31	32	1	46	1.02		0.62	0.0	3	21	7	3	U. S. Reclamation Service.
Toucheb	Walla Walla	556	3	61.0		96	31	33	16	49	0.34		0.12	0.0	6	15	4	12	D. W. Dorrance.
Toucheb Ridge	Columbia	2,500	1								2.73		1.15	0.0	6	16	8	7	R. H. King.
Trinidad	Grant	900	6	66.1		98	31	41	14	39	0.09		0.05	0.0	2	25	6	0	J. C. Wheeler.
Twisp	Okanogan	1,619	7																J. S. Allen, jr.
Tyee	Chelan	2,000	1								0.48		0.27	0.0	3	15	10	6	Elias McCrea.
Vancouver	Clark	100	35	59.3	+ 1.7	90	31	40	6†	41	2.11	- 0.30	1.35	0.0	8	11	12	8	A. A. Quarberg.
Vashon Island	King	110	21	54.1		75	31	36	15	34	2.42		1.12	0.0	11	16	3	12	Miss Gertrude McClintock.
Wahluke	Grant	410	6	65.4†		99*	31	39*	1	44*	T.		T.	0.0	0	20†	7†	2†	F. C. Koppen.
Wallace	Okanogan	4,000	1								1.56		1.34	0.0	5	8	19	4	G. A. Wallace.
Walla Walla	Walla Walla	1,000	26	63.7	+ 3.0	95	31	41	15	36	1.40	- 0.43	0.41	0.0	9	17	8	6	U. S. Weather Bureau.
Waterville	Douglas	2,624	20	57.9†	+ 4.5	90*	31	31*	15	52*	0.25	- 1.07	0.25	0.0	1	21*	5*	0*	O. R. Hopewell.
Wenatchee (near)	Chelan	1,169	11	59.6	+ 4.1	88	31	39	15	35	0.19	- 0.63	0.14	0.0	2	16	12	3	Geo. A. Pitcher.
West Branch	Stevens	2,600	1																U. S. Forest Service.
Wilbur	Lincoln	2,203	11	56.1	+ 3.3	88	31	25	27	50	0.94	- 0.56	0.72	0.0	3	15	7	9	Rollin J. Reeves.
Yale	Cowlitz	375	3	57.9		87	30†	35	14	44	3.99		1.16	0.0	12	11	11	9	L. F. Williams.
Zindel	Asotin	715	8	66.0		97	23†	41	15	43	2.45		1.01	0.0	8	20	8	3	M. W. Zindel.
Oregon.																			
Albany	Linn	214	28	57.4	0.0	91	31	41	2†	43	1.75	+ 0.51	0.52	0.0	11	13	9	9	F. M. French.
Ashland	Jackson	1,940	22	61.1	+ 4.2	94	30	38	3†	39	0.77	- 0.90	0.20	0.0	6	14	14	3	F. H. Carter.
Astoria	Clatsop	11	48	54.8	- 0.5	73	16	43	11†	27	2.87	- 0.93	1.08	0.0	12	13	7	11	Irving Club.
Baker City	Baker	3,466	20																U. S. Weather Bureau.
Bay City	Tillamook	14	15	53.7	+ 1.7	74	17	34	15	37	3.32	- 2.44	0.91	0.0	12	15	4	12	J. O. Bosarth.
Bend	Crook	3,629	8																F. O. Minor.
Birch Creek	Wheeler	2,903	1	59.0†		98*	30	35*	16	46*	0.75		0.35	0.0	5	16†	5†	6†	F. S. Matteson.
Black Butte	Lane	1,200	9	53.6		80*	8†	29	16	39	3.47		1.40	0.0	7	23	2	6	William Harris.
Blalock	Gilliam	235	11	67.2	+ 4.5	101	31	42	11	24	0.63	+ 0.12	0.36	0.0	21	19	8	4	Geo. W. Long.
Buckhorn Farm	Josephine	1,300	12																E. F. Meissner.
Cascade Locks	Hood River	100	19	58.1	+ 1.3	83	30†	41	16	38	5.25	+ 1.69	2.14	0.0	10	18	6	7	Val. W. Tompkins.
Casadero	Clackamas	514	1	59.0†		89*	31	40*	13†	41*	2.76		0.98	0.0	13	14*	4*	12*	Alf Drill.
Condon	Gilliam	2,888	2	55.2		87	31	30	11	50	0.86		0.36						

TABLE 1.—Climatological data for May, 1910. District No. 12—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Oregon—Cont'd.																				
Joseph.	Wallowa.	4,400	21	50.5	+ 2.0	82	23	32	15†	38	1.89	- 0.09	0.44	0.0	16	17	6	8	s.	F. F. McCully.
La Grande.	Union.	2,784	24	56.8	+ 2.9	96	31	30	16	48	2.67	+ 0.48	0.80	0.0	11	15	4	12	.....	W. A. Worstell.
Madras.	Crook.	2,150	1																.....	Robert Rea.
Marshfield.	Coos.	12	6	54.9		82	16	38	1†	43	1.16		0.35	0.0	11				.....	Mrs. E. I. Mingus.
McKenzie Bridge.	Lane.	1,400	7	57.0		93	30	27	16	54	4.14		1.11	0.0	11	21	0	10	sw.	Geo. Frissell.
McMinnville.	Yamhill.	180	22	45.0	+ 2.7	89	31	35	15	44	1.45	- 0.60	0.71	0.0	8	16	6	9	sw.	J. H. Pruett.
Mikkalo.	Gilliam.	1,600	4	59.5		94	31	34	15	60	0.97		0.51	0.0	4	25	4	2	sw.	Frank Little.
Miramonte Farm.	Clackamas.	195	21	58.6	+ 2.8	89	31	36	15†	44	2.00	- 0.78	0.89	0.0	8	19	6	6	n.	G. M. Muecke.
Monroe.	Benton.	350	13	57.8	+ 3.6	88	31	36	15	43	0.64	- 1.31	0.20	0.0	7	16	6	8	sw.	L. A. Peek.
Mount Angel.	Marion.	485	24	59.8	+ 3.1	86	31	43	14†	38	2.30	- 0.29	0.65	0.0	8	17	8	6	sw.	Dr. W. F. Fisher.
Mount Hood.	Hood River.	1,650																		S. G. Babson.
Mountain Park.	do.	1,550	4	57.0		90	31	34	16	41	3.64		1.90	0.0	9	16	4	11	w.	M. Markley.
Musick.	Douglas.	5,000		44.0		78	30	19	3†	40	3.28		1.42	8.0	7	20	4	7	w.	Alex. Lundburg.
Newport.	Linton.	69	22	53.6	+ 1.3	71	18	40	14†	27	1.50	- 2.93	0.44	0.0	10	11	11	9	nw.	William Matthews.
Pendleton.	Umatilla.	1,272	20	59.7	+ 1.8	96	31	32	16	50	1.36	- 0.03	0.68	0.0	6	18	12	1	sw.	H. F. Johnson.
Pilot Rock.	do.	1,872	1	62.6		95	31	32	20	46	1.43		0.43	0.0	8	14	14	3	sw.	John P. McManus.
Pompeii.	Clackamas.	3,580	15	49.0	+ 5.8	83	23	28	14	39	5.05	- 0.53	1.75	12.0	10	14	9	8	sw.	O. C. Yocum.
Portland.	Multnomah.	57	38	60.0	+ 2.7	86	31	44	15	35	1.82	- 0.60	1.07	0.0	9	12	8	11	nw.	U. S. Weather Bureau.
Prineville.	Crook.	3,000	13	56.7	+ 3.6	94	30	25	1	53	1.93	+ 1.10	0.75	0.0	8	20	6	5		
Prospect.	Jackson.	2,750	4	56.6		98	30	28	15	56	1.44		0.50	0.0	7	18	7	6	a.	E. F. Graham.
Ramsey.	Wasco.	1,350		55.9		89	31	30	15	43	1.88		0.96	0.0	6	21	4	6	e.	Mrs. Iva B. Collins.
Range.	Grant.	3,500	1	45.3		89	30	14	4†	61	0.82		0.67	0.0	2	19	6	6		Craig Thom.
Richland.	Baker.	2,850	8	58.2		96	31	30	16	50	1.72		0.75	0.0	6	22	2	7		C. G. Morgan.
Riverside.	Malheur.	3,000	11	58.6	+ 4.5	102	31	24	16	63	0.68	- 0.47	0.30	0.0	4	14	14	3	w.	Mrs. Leah Fairman.
Roseburg.	Douglas.	523	33	60.1	+ 3.6	91	31	38	16	44	2.01	+ 0.03	1.50	0.0	7	16	12	3	nw.	U. S. Weather Bureau.
Salem.	Marion.	120	20	59.2	+ 3.1	85	30†	42	14†	28	1.58	- 0.95	0.68	0.0	7	14	4	13	sw.	M. P. Baldwin.
Siskiyou.	Jackson.	4,115	1	54.5		86	30	30	3	33	1.01		0.39	0.0	8	19	3	9	e.	Lewis F. Bates.
Sparta.	Baker.	4,150	17																	Hon. J. A. Wright.
Stafford.	Clackamas.	400	13	58.6	+ 4.0	90	31	36	15	43	2.48	- 0.40	1.21	0.0	10				sw.	John P. Gage.
The Dalles.	Wasco.	112	35	62.9	+ 2.3	95	31	39	16	43	1.31	+ 0.76	0.75	0.0	3	20	3	8	w.	S. L. Brooks.
The Heads.	Curry.	300	5																	Willis T. White.
Toledo.	Linton.	80	20	56.6	+ 3.2	84	17†	40	1†	40	1.65	- 2.53	0.40	0.0	6	24	4	3	w.	C. B. Crono.
Umatilla.	Umatilla.	340	14	65.4	+ 4.5	101	31	38	1	45	1.07	+ 0.37	0.60	0.0	3	22	2	7	w.	Mrs. Helen T. Duncan.
Vale.	Malheur.	2,450	18	60.4	+ 4.6	99	31	29	16	52	0.71	- 0.42	0.28	0.0	6	23	6	2	ne.	H. P. Osborn.
Van.	Harney.	3,506	4	55.0†		94†	23	29†	17	54†	0.93		0.55	0.0	3	20	7	4	nw.	Geo. Howe.
Wallace Orchard.	Polk.	170	1	57.0		87	31	36	14	40	2.06		0.69	0.0	9	12	13	6		Chas. A. Parks.
Wallowa.	Wallowa.	2,935	7	53.8		92	31	26	16	49	2.23		0.62	0.0	9	14	7	10	w.	L. J. Coverstone.
Wasco.	Wasco.	1,500	2	61.5		95	31	40	1	44	1.06		0.43	0.0	5	15	10	6		A. J. Swift.
Warm Springs.	Crook.	1,600	8	59.7		96	31	32	17	51	1.92		1.04	0.0	4	21	1	9	nw.	C. C. Covey.
Weston.	Umatilla.	1,800	20	61.0	+ 6.1	94	23	32	3	51	1.53	- 0.85	0.45	0.0	7	17	5	9	ne.	M. A. Baker.
Williams.	Josephine.	1,368	17	59.2	+ 4.5	98	31	31	15	55	1.02	- 0.58	0.60	0.0	5	13	5	13	n.	J. M. John.

- * b, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
† Precipitation included in that of the next measurement.
‡ Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.
§ Also on other dates.
|| Separate dates of falls not recorded.
|| Data are from standard instruments not supplied by the U. S. Weather Bureau.
|| Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.
|| Estimated by observer.
|| Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—Daily precipitation for May, 1910. District No. 12, Columbia Valley.

Stations.	River basins.	Day of month.																														Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		31	
Montana.																																		
Anaconda.....	Mimoula.....				.42	.02	.02			*	.58			T.	.04	.02			T.	T.	T.	T.				.08		T.	.60				1.78	
Bison Mountain..	do.....				.25	T.				T.	.30	.09			.11	.90			.05		T.	.30				.27	.39	.16					2.91	
Columbia Falls....	Flathead.....										.49	.62			.67				1.02							.59		.45			.30		4.14	
Como.....	Bitter Root....				.38	.01					.30	.11			.06												.14	.19					1.19	
Darby.....	do.....										1.00	.05	.10		.10	.10					.03								.40				1.78	
Dayton.....	Flathead.....										.58	.10			.13	.12			.02	.20	.01				.04	T.	T.	.64		.08			1.78	
East Anaconda|||	Mimoula.....				.47	.01	.04				.50	.01	T.								T.						T.	.02					1.66	
Fortine.....	Flathead.....																									.40	.02	T.		.08				
Hamilton.....	Bitter Root....																																	
Hat Creek.....	Mimoula.....				*	.35				.06	.60				.30	.35					.03							.01	.52				2.22	
Kalispell.....	Flathead.....									.10	.63	.02			.08	.10					.36			T.	T.	T.	.16	.17		.05			1.66	
Lost Creek.....	Mimoula.....				T.	.50				*	.46				T.	T.										T.	T.	.61					2.33	
McGinnis Meadows..	Kootenai.....									* .83	.30				T.	T.					T.	T.	T.				T.	.25	.05	.75	.15		1.92	
Mimoula.....	Mimoula.....					.43				T.	.63	.05			.07	.03										T.	.03	.65	.03				2.76	
Ophir.....	do.....					.32	T.				.97	T.			.08	.90										T.	.03	.31					0.70	
Ovando.....	do.....					.30					.32	.05			.03	T.										T.							2.10	
Phillipsburg.....	do.....					.84					.41				.10	.18										T.			.57				0.90	
Plains.....	Columbia.....					T.				T.	.60				T.	T.										T.	T.	.18	.03	.15	.04	T.	2.05	
Pleasant Valley....	Kootenai.....										.76	.14			.11						.30	.10					.14	.14			.24	T.	1.30	
Polson.....	Flathead.....										.62	.04			.10	.09					.13						.18	.14	.06	.44		.05	T.	2.00
St. Ignatius.....	do.....				.10	T.			T.			.56	.10			.03	.21	T.	T.		*	.13					.20	.22	.45				1.85	
St. Regis.....	Mimoula.....									.04	.48	.36			.07												.50	.22	.60		.12		3.25	
Saltese.....	do.....									1.28	.32				21												.40	.70	.05	.42	.16	.31	6.10	
Snowshoe.....	Kootenai.....									2.30	.54				.33	.08				.09	.08						.04	.40	.10	.35	.30		1.83	
Troy.....	do.....										.60	.05			.03												.36	.11	.05	.24	.02	.30	3.03	
Upper Lake McDonald.	Flathead.....										.38				.37	.66					T.	.46	.08					.30	.11	.05	.24	.02	.30	
Wyoming.																																		
Afton.....	Snake.....				.15	.20					.12					.05						.30					.47						1.29	
Alta.....	do.....	.02	.06			.17	.10				.04				.30	.05						.12				.07	.47		.09	.05			2.54	
Bedford.....	do.....	.12				.42	.05				.10				.03												.32						1.04	
Snake River.....	do.....	.40				.10					.40				.30	.20						.40				.10		.20	.20	.30			2.60	
Nevada.																									T.								1.30	
San Jacinto.....	Snake.....		T.	T.	1.27	.03											T.																	
Utah.																																		
Standrod.....	Raft.....	.21			.63	.04											.01									T.	.10						0.90	
Idaho.																																		
Atlanta.....	Boise.....										.12																T.	T.					T.	0.81
Albion.....	Upper Snake.....	.25		T.	.38	.18	T.																				.10	.02					0.74	
Almo.....	do.....		.10		.40	.12																											1.02	
American Falls....	do.....	.62						.28			.12																						0.78	
Blackfoot|||	do.....	.03	T.		.27	.32					.08			T.	T.	T.	T.				.08					.09	.06		T.			1.08		
Blackfoot Dam.....	do.....	.18			.21	.26	.08				.10				.02	T.	.02																	
Blanche.....	Middle Snake.....																																	
Bock's Ranch.....	Boise.....									T.	.25										T.						.18	T.	.37				2.32	
Bogus Creek.....	Payette.....	T.	.05	.83	.55	.15					.06																T.	.04	T.	.18			T.	1.14
Boise.....	Boise.....				.54	.31	.01																				.37	.03					1.82	
Bonniers Ferry.....	Upper Columbia..										1.02	.12			.13					.15	T.						.10	.47					2.11	
Boulder Mine.....	Boise.....	.17		.43	.56	.04																											0.55	
Buhl.....	Upper Snake.....		.20	.21							.14																.08	.11	.10	.65	.05	.11		4.38
Burke.....	Upper Columbia..									T.	1.12	.76	T.		.36	.04											.04	T.	.20				0.84	
Caldwell.....	Boise.....			.33	.04	.11					.12				.09	T.											.05	T.					0.49	
Camas.....	Lost River Region..				.05	.20					.10				.25	.02						.02						.15	.13	.45			2.01	
Cambridge.....	Middle Snake.....			.37	.62	T.																					T.						0.59	
Chesterfield.....	Upper Snake.....	.30	.02		.22	.05																												
Clawson.....	do.....														1.00	.07											.68				.25		2.00	
Coeur d'Alene.....	Upper Columbia..					.25																						.30	.30	T.			0.90	
Cottonwood Creek..	Boise.....	.05			.25																													
Crawford.....	Payette.....				.25	.48					.18	.74	.05			.04											.51	.45	1.58				4.28	
Culdesac.....	Clearwater.....					.82					.87	.30															.85		.40				3.44	
Deary.....	do.....				.55	.64					.02	1.07	.02														.03	.92	.02				4.04	
Dent.....	do.....				.06	.71									.35												.18	.18	.10				1.94	
Driggs.....	Upper Snake.....	.35												.17		T.	.05	T.									.15		T.				0.93	
Edie.....	Lost River Region..				.26	.30																												
Edwardsburg.....	Salmon.....																																	
Emmett|||	Payette.....	.05			.03	.40					.20	.12					.05											.15	1.00				2.35	
Forney.....	Salmon.....				.35	.45	T.					.15										.35						T.	.44				1.39	
Garden Valley.....	Payette.....				.24	.15						.07																					0.46	
Garnet.....	Middle Snake.....																																	
Gilbert.....	Clearwater.....																										.02							0.39
Glenns Ferry.....	Middle Snake.....				.33							.04																					0.32	
Gooding.....	Wood-Malad.....	.07		T.	.10							.15			</																			

TABLE 2.—Daily precipitation for May, 1910. District No. 12—Continued.

Stations.	River basins	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Idaho—Cont'd.																																	
Orofino	Clearwater				.50	.47				.04	.83				.21												.81	.05	.98				3.89
Payette	Payette			.30	.08	.03				T.	.12																.05	T.	.25				0.83
Pebble	Upper Snake		.01								.06				T.	.10										T.							0.21
Pierson	Salmon					.32																								.34			0.66
Pine	Boise																																
Placerville	do																																
Pleasant Valley	do			.42	.11	.25					.04																T.	.06	.14				1.02
Pocatello	Upper Snake		.12	T.	.37	.17					.24					.01										T.	.01				T.		0.94
Pocatello Nursery	do		.05		.38	.21					.05					.13										T.	.04	.04					0.92
Poplar	do																																
Porthill	Upper Columbia										.36	.50																.20			.03		1.09
Powers Ranch	Boise																																
Pyle Creek	Payette		T.		.56	.28					.17																	.05		.25			1.11
Rattlesnake Creek	Boise																																
Ruby Creek	do																																
Rupert	Upper Snake		.02	T.		.01	.01				.13					T.										T.	T.						0.17
Salmon	Salmon				.05	.17	T.	T.			.10			T.	T.		.01										.08		.58	.08			1.07
Salmon River Dam	Middle Snake		.04		.05	.34	.43				.03						.02														.02		0.95
Sheep Hill	Boise																																
Shoshone	Wood-Malad																																
Silver City	Owyhee		.01	.01	.24	.02	.36	T.			.04	.04				T.										.04	.15		.11				1.02
Smith Prairie	Boise																																
Soldier	Wood-Malad																																
Sugar	Upper Snake		T.		T.	.23	.31	T.			.18				.27						.18						.15		.03				1.35
Sunnyside	Middle Snake		T.		.25	T.	.05				.03																		.20				0.53
Tilden	Upper Snake		T.			.42	.22				.15					T.																	0.79
Tripod Mountain	Payette			.46	.56	.91					.26																	.25		.40			1.94
Twin Falls	Twin Falls					.30	.12				.10																						0.52
Vernon	Upper Snake		.22		.11	.60	T.				.20			T.	.30	T.														.13			1.73
Wallace	Upper Columbia					.04					T.	.78	.72		.17					.03	.01	T.					.05	.86	.04	.36	.01	.15	3.22
Wendell	Upper Snake				.28	.08					.23																T.						0.59
Washington.																																	
Aberdeen	Coast			.28							.67	.26		.09	.04												.03	.40	.36	.54	.62	.21	3.50
Anacortes	Puget Sound																										.08	.39	.01	.02	.27	.91	0.78
Baker	do										1.62	.28			.15												T.	.36	.17	.17	.04	.64	4.43
Bellingham	do										.72	.05	.15		.03												.10	.25	.19	.03	.40	.42	2.34
Blaine	do										.83	.53		.18													.05	.40	.19	.12	.07	.50	2.80
Blewett	Wenatchee																																
Bremerton	Puget Sound										.40	.01		.02													.02	.07	.14	.02		.35	1.03
Brewster	Columbia		T.							1.02																				T.	.02		1.04
Bumping Lake	Yakima										.16	T.															.02		.02		.02	.13	0.35
Cashmere	Wenatchee			T.							.16	T.															.02	.11	.02		.02	.13	0.35
Cedar River	Puget Sound										1.62	.20	.06	.13													.38	.11	.22	.47	.48		3.67
Centralia	Coast		.30	.03							.12	.38			T.												.16	.20	.33	.20	.45	.16	2.33
Cheney	Spokane					T.					.70																						0.70
Clealum	Yakima										.30					.03												.17			.10		0.86
Clearbrook	Puget Sound										.80	.50		.20													.12	.43	.36	.15	.61		4.17
Clearwater	Coast																																
Colfax	Palouse										.32		.40															.10		.18			1.00
Colville	Columbia										.54	.08															.05	.06					0.73
Conconully	Okanogan									1.02	T.																	T.			.15		1.17
Cowiche	Yakima																																
Crescent	Spokane																																
Davenport	Columbia				.03						.48	.09																					0.60
Dayton	do		T.		T.		.53				.11				.06														.07	.04	.21		1.02
Detroit	Puget Sound		T.								.27	.34	.02														.11	.34	.22	.22	.26	.34	2.12
Dixie	Columbia			.10	.20	.48					.01	.05	.01		.20													.21	.05	.38			2.69
Duckabush	Puget Sound		.03								.01	.05	.06		.03	.08			.03								.05	.10	.70	.02	.72	.04	1.92
East Sound	do																																
Ellensburg	Yakima					T.					.16																					T.	0.16
Ephrata	Columbia																																0.00
Forks	Fort Simcoe													.71	.44	.02											.02	.28	.58	.15		.85	3.05
Fort Simcoe	Yakima				.30					.31																							0.61
Goat Lake	Puget Sound		.05			.03					1.25	.99	.13		.21	.05										</							

TABLE 2.—Daily precipitation for May, 1910. District No. 12—Continued.

Stations.	River basins.	Day of month.																															Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Washington—Cont'd.																																			
Port Townsend	Puget Sound									.13	.26	.24		.04												.05	.27	T.		.04	.02		1.05		
Pullman	Palouse					.06				.06																	.40	T.				0.52			
Quinalt	Coast		.04			.02				.02	.40	.41	.07	.45	.01	.01										.15	.48	.40	.35		.42	T.	3.23		
Republic	Kettle										.40	.05														.14	.10	.02	.02				0.73		
Rex Creek	Columbia																																0.23		
Ritzville	do.				.01					.09	.07																.02	.01			.03		0.55		
Rock Lake	Palouse									.47	.18				T.											T.	T.						1.00		
Rosalie	do.					.07				.02	.55															T.	.15	.03	.10	.08			1.19		
Russells Ranch	Yakima			T.	.21					.18	.52	.01		T.		.02										T.	T.	.09	T.	.02	.14		1.88		
Scenic Hot Springs	King									.78	.04	.01		.01												.12	.27	.10	.15	.40			3.47		
Seattle	Puget Sound									.15	.76	.48			.03											.10	.44	.04	.08	.18	.21		4.58		
Sedro-Woolley	do.																																0.58		
Sixprong	Columbia			.20	.36	.02																					.45	.27	.39	.11	.03	.65		2.42	
Skagit Power Dam	Puget Sound									.05	.10	.24		.09	.02												.22	.23	.09	.10	.16	.12		3.18	
Snohomish	do.									.03	.62	.17	T.	T.	.17	T.											.16	.25	.17	.08	.04	.48		0.87	
Snoqualmie Falls	Columbia		.01							.67																								3.73	
Snyders Ranch	Coast		.28	.17						.01	.27	.40	.09	.15													.02	.51	.37	.80	.42	.24		0.88	
South Bend	Spokane					T.	T.			.03	.52	.01		T.							T.						T.	.17	T.		T.	.15		2.27	
Spokane	Puget Sound									*		.85															.14	.31	*	.57	.40			1.35	
State University	Columbia									.15																	T.					.20		0.48	
Stokes Ranch	Pend d'Oreille									.16	.05	T.		.02	.04	.02											.15	.38	.15	.10	.19	.48		2.74	
Sullivan Lake	Puget Sound																																	0.48	
Sumner	Yakima				.34	.03				.73	.39	T.		.03	T.												.11	.16	.16	.01	.56	.02		2.17	
Sunnyside	Puget Sound	T.	T.							.06	.29		.36														.12	.24	.41	.04	.81	T.		2.34	
Tacoma	Coast		.01					T.		.16	.62																							1.02	
Tatoosh Island	Yakima			T.	.24					.16	.62																							0.34	
Tieton	Columbia			T.	.10	.05				T.	.05																	.01	.01	.12				2.73	
Touchet	do.	T.		T.	.37	.44				.15																		.05	.10	.62				0.09	
Touchet Ridge	do.			T.																															
Trinidad	do.			T.																															
Twisp	do.																																		
Tyee	do.									.27																	.03					.18		0.48	
Vancouver	do.			1.35	.05	T.				.08	.14																.10	T.	.05	.04	T.	.30		2.11	
Vashon Island	Puget Sound									.20	.12	.02	T.	.05	T.												.06	.06	.28	.13	.23	.28	.01	T.	2.42
Wahluke	Columbia																																	T.	
Wallace	Okanogan										1.34																.02	.03		.04		.13		1.56	
Walla Walla	Columbia		.23	.02	.23					.06	.35				.01													.14	.02	.34				1.40	
Waterville	do.										.25																							0.25	
Wenatchee (near)	do.					T.				T.	.14															T.	T.					.05		0.19	
West Branch	Spokane																																		
Wilbur	Columbia									.72					.15											.07								0.94	
Yale	do.		.27	.16	.27	.04				.23	.85	.10															.10	.11	.31	.03	T.	.52		3.99	
Zindel	Snake					.71				.15	.18	.06															.05	.24	.05	.01				2.45	
Oregon.																																			
Albany	Willamette	.16		.38	.52	.08				T.	.22	.04															.15	.06	.02	.08		.04		1.75	
Ashland	Rogue		.20	.19	.05					.12	.03																T.	.18	T.					0.77	
Astoria	Columbia		.09	.08	T.					.02	.14	.18	.09	.01														.47	.24	.12	.14	.29		2.87	
Bagleys Ranch	Snake			.12	.16	.27					.10																	.33	.10	.23				1.31	
Baker City	do.																																		
Bay City	Coast		T.	.91	.05	.01				T.	.20	.23	T.		T.												.07	.57	.51	.15	.04	.28		3.32	
Bear Creek	Deschutes			.39						.07	.51																.06							1.03	
Bear Valley	John Day			T.											.10																			0.30	
Beaver Creek	Deschutes																																		
Beach Creek	John Day			.24							.66																								
Bellfontaine	Willamette	.03	T.	.20	.12	T.				T.	.24																	.04	.06	.06		.02		1.15	
Bend	Deschutes																																		0.77
Big Basin	John Day			.05						.20	.20																								
Birch Creek	do.			.35	.01					.01	.31																	.06		.01				0.52	
Black Butte	Willamette			.55	.50																						T.	.07							0.75
Blalock	Willamette			.55	.50																							.10			.12	.15		3.47	
Blalock	Columbia			.36	.27																													0.63	
Blue M't																																			

MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2.—Daily precipitation for May, 1910. District No. 12—Continued.

Stations.	River basins.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Oregon—Cont'd.																																		
Grindstone	Deschutes	.11	.20	.40	.32					.08	.27													T.	.11		.19	.02					1.70	
Gumboot	Snake	.03		.40	.36	.01				.01	.17					T.										.47	.10	.32					1.87	
Gurdane	Columbia			.45	.23	T.				.10	.70	.36												.11	T.	.10	.07	.09					1.91	
Happy Home	Umpqua		.08	.22	.46	.12				.22	.10														.08	.24	.40						2.92	
Hay Creek	Deschutes		.37	.50	.37					.24	.35															.04		.01					2.88	
Hazeldell	Willamette		.41	.27	T.					1.31	.18														.20	.15							2.32	
Head Works	do		.48	.32	.12	.23				.23	.73	.04			.17										.03	.07	.30	.14	T.	.25			5.01	
Heppner	Columbia			.27	.02	T.				T.	.52															.03	T.	.01					0.93	
Hermiston	Umatilla			.09	.46	.02					.05																						2.08	
Hilgard	Grande Ronde			.61	.70	.15				.90	.20					.05										.03	.01	.03					1.46	
Hood River	Columbia		T.	1.40	T.	.01				.05															T.	.35	.02	.18					3.38	
Hoover	Willamette			.98	.60	.30				.65	.50	T.															.08	.04	.51				2.82	
Howardville Station	Grande Ronde	.01		.09	.61	.30					.95	.13															.30						1.25	
Huntington	Snake			.95							.05	.15															.11	.03	.18				1.90	
Ibex Mine	John Day			.44	.27	.01				T.	.46		.17	.12		.11										.10	.35	.02	.18		.12		0.74	
Ironside	Snake			.32						.05	.15																						1.90	
Jacksonville	Rogue	T.	.12	.23						.73														.04	.10	.30	T.	.04					1.46	
Joseph	Grande Ronde			.40	.44	.20					.40																.33	.12					1.89	
Kamela	do			.40	.60						.60	.40															.30	.20	.10				2.60	
La Grande	Rogue	.04	.34	.29	.24	.05				.08	.80	.30	.46	.04	.05												.21	.04	.36				2.67	
Lilyglen	John Day									.45	.18																.09	.01	.08				1.74	
Long Creek	Deschutes	.15		.25																													1.21	
Madras	do		.17	.75	T.					.13	.49														T.	.05	.08						1.59	
McKenzie Bridge	Willamette	.07	.22	.62	.48	.04				.70	.11	.14														.32	.08	.16			.01	.04	4.14	
McMinnville	do		T.	.71	.03					T.	.34														.15	.10	.07						1.45	
Meacham	Umatilla			.22	.55								.59	.72	T.	T.	T.	T.	T.											T.	.10	T.	2.18	
Metolius	Deschutes																																0.97	
Mikkalo	John Day			.26	.51						.15																			.05			1.80	
Miller Prairie	Columbia		.25	.25	.02					1.06	.02															.10				.10			2.00	
Miramonte Farm	Willamette			.89	.31					.05	.25															.06	.05	.08				.31	0.64	
Monroe	do	.02	.02	.20	.16					T.	.17														.04	.03	T.						2.52	
Mountainhome	Columbia		.12	.12						.05	.29															.29	.10	.30			.07	.02	2.50	
Mount Angel	Willamette		.65	.52						.20	.06															.05	.06	.14			.22		2.86	
Mount Hood	Columbia		.25	.12	.92	.19				.21	.19																.08	.02	T.				3.64	
Mountain Park	do		.15	.19	.90	.51				.27	.49	.01															.05	.15	.11				1.53	
Mountain Ranch	Rogue		.10	.40	.06					.32																.33		.32					3.28	
Musick	Umpqua	T.	.34	.55						.35	1.42					T.									T.	T.	.22	.28	.12				1.50	
Newport	Coast		.15	.25	.02					.05	.28	.07			.03																			
Nigger Flat	Malheur																														.20			
Ochoco	Deschutes																																	
Ochoco Creek	do	.72	.27								.36																						1.44	
Owyhee	Owyhee			.30	.07	.05																											0.42	
Pendleton	Umatilla			.14	.68	.04				T.	.32					T.											.05	T.	.13				1.36	
Persist	Rogue	.13	.32	.05						.33	.67																.25	.16					1.91	
Pilot Rock	Umatilla		.17	.43	.05						.34	.01													T.		.10	.01	.32				1.43	
Pompeii	Willamette		.78	.175	.70					.42	.80	.10													T.	.05	.10	.13	.22				5.05	
Portland	do		.42	.65	.07					.09	.12	T.														.04		.05	T.				1.82	
Post	Deschutes		.22	.60						.09	.27																						1.18	
Power House	Walla Walla																																	
Prineville	Deschutes	.45	.49	.06						.09	.75															.04	.03		.02				1.93	
Prospect	Rogue		.18	.07						.50	.30																.31	.03	.03				1.44	
Rager Creek	Deschutes																																	
Ramsey	Columbia	.12	.96	.25						.10	.40																						1.88	
Range	John Day		.67	T.						.15	.60														T.	T.	T.	T.					1.42	
Ray Creek	Columbia	.13		.19	.20					.05	.50														T.	T.	T.	T.					1.07	
Reston	Umpqua																																	
Richland	Snake			T.	.75	.03					.49																	.20	.04	.21			1.72	
Riverdale Ranch	Deschutes																																	
Riverside	Malheur	.30								.20																	.10			.08				0.68
Rock Creek	Willamette										T.	.20															.18						0.38	
Roseburg	Umpqua	.25	.06	.11						1.24	.26																.06	.03					2.01	
Rosland	Deschutes	.34	.41	.14					T.	.54	.74														.02	.01	.03	.03					2.26	
Salem	Willamette		T.	.08	.26					T.	.24																.18	.04	.08	T.	T.	.10	1.58	
Seneca	Interior																																	
Siskiyou	Rogue	.01	.09	.39	.15	.05				.12	.19																						1.01	
Sisters	Deschutes		.50	.28	.10					.36	.24																	.10	T.	T.			1.49	
Sparta	Snake																																	
Stafford	Willamette		.12	.21	.38	.01			.11	.19	.12	T.													.08	.03	.07	T.		.28			2.48	
Starkey	Grande Ronde			.50	T.	.10				.05	T.	.30															.30	.20					1.40	
Summit	Willamette		.34	.15						.05	.40	T.														.07	.13	.06					1.20	
Summit Prairie	Deschutes		.05	.95						.21	.40																							

TABLE 3.—Maximum and minimum temperatures at selected stations for May, 1910. District No. 12, Columbia Valley.

Date.	Montana.				Idaho.																								
	Kallispell.		Missoula.		Afton, Wyo.		Boise.		Bonners Ferry.		Hot Springs.		Lewiston.		Mackay, Id.		Meadows.		Pocatello.		Salmon.		Shoshone.		Vernon.		Wallace.		
Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	60	29	63	32	51	31	61	40	65	28	62	46	70	43	54	34	63	30	53	34	62	29	.....	.....	50	34	61	29
2...	63	36	66	32	52	28	66	40	66	29	71	32	73	39	60	32	60	26	58	32	68	25	.....	.....	57	28	66	30
3...	71	33	74	32	67	24	63	43	73	29	69	29	70	43	56	28	55	28	71	39	64	30	.....	.....	67	29	70	32
4...	74	44	72	49	69	30	50	41	72	40	52	42	60	50	65	34	50	33	53	34	74	46	.....	.....	72	34	65	43
5...	74	49	64	44	42	30	59	46	69	42	62	46	65	50	50	32	54	42	47	36	56	38	.....	.....	40	33	56	45
6...	75	42	76	51	55	33	71	43	73	45	75	42	76	46	68	35	67	33	66	43	72	43	.....	.....	56	36	73	45
7...	77	47	79	41	65	35	75	49	87	42	80	47	84	51	73	38	71	42	72	41	80	44	.....	.....	67	38	77	42
8...	78	45	80	42	69	33	82	51	80	42	85	50	85	50	76	42	77	38	76	46	81	38	.....	.....	73	38	76	42
9...	78	45	74	38	75	35	75	56	83	45	84	45	75	50	72	43	71	38	78	49	72	50	.....	.....	77	38	84	40
10...	53	44	60	45	65	43	70	51	70	46	77	54	69	54	62	44	66	42	66	46	76	44	.....	.....	67	46	62	49
11...	61	44	65	42	65	29	71	44	65	44	78	35	74	51	68	36	66	36	70	39	74	33	.....	.....	70	34	60	43
12...	79	37	74	37	70	30	77	48	73	37	80	42	78	49	72	39	74	36	74	43	.....	.....	.....	.....	71	36	72	37
13...	72	39	72	38	70	32	76	47	70	37	78	37	74	49	71	42	75	37	75	43	.....	.....	.....	.....	71	37	68	38
14...	54	39	66	38	64	32	64	45	62	40	75	33	65	51	64	42	63	40	62	47	.....	.....	.....	.....	61	35	63	42
15...	54	35	50	33	45	25	60	40	67	31	70	29	68	47	44	38	59	27	49	33	.....	.....	.....	.....	45	28	61	29
16...	66	30	65	26	55	27	66	38	74	32	72	35	74	40	52	33	69	25	59	36	.....	.....	.....	.....	60	30	67	30
17...	74	38	76	33	65	19	74	45	78	37	78	38	85	43	68	32	70	28	69	32	.....	.....	.....	.....	66	27	77	35
18...	71	42	75	37	67	22	79	44	70	40	84	42	78	48	73	35	74	30	74	41	.....	.....	.....	.....	69	30	75	40
19...	53	39	69	44	64	33	59	41	70	32	80	43	69	49	62	36	70	34	65	49	.....	.....	.....	.....	61	33	68	42
20...	58	36	62	34	51	31	66	37	67	32	72	37	72	43	58	37	64	26	59	42	.....	.....	.....	.....	52	38	66	33
21...	68	36	74	44	58	24	73	42	78	34	77	40	81	43	78	35	74	46	67	39	.....	.....	.....	.....	64	30	75	35
22...	81	42	84	41	70	28	82	50	83	44	85	45	89	48	79	37	83	32	77	40	.....	.....	.....	.....	73	32	82	41
23...	80	50	86	44	75	33	87	54	88	43	92	48	93	53	78	39	85	33	83	46	.....	.....	.....	.....	77	39	86	44
24...	81	50	85	45	76	36	84	57	90	45	90	55	90	54	76	45	82	43	82	52	.....	.....	.....	.....	77	44	86	45
25...	67	48	71	50	60	40	68	52	72	48	75	59	72	50	63	47	60	46	67	55	.....	.....	.....	.....	64	46	62	46
26...	68	39	72	33	63	33	80	51	62	36	84	59	65	48	70	34	68	35	73	45	.....	.....	.....	.....	69	28	64	36
27...	56	44	61	47	60	37	65	49	64	36	72	58	66	48	48	44	58	43	68	47	.....	.....	.....	.....	62	40	58	45
28...	61	36	68	34	65	33	75	45	66	32	79	47	76	44	68	34	68	32	72	42	.....	.....	.....	.....	67	36	67	33
29...	67	48	70	46	79	31	88	52	71	45	92	48	77	54	70	39	80	36	86	49	.....	.....	.....	.....	77	56	63	46
30...	76	42	83	42	79	35	93	54	81	42	96	54	90	53	84	47	87	41	88	47	.....	.....	.....	.....	81	40	80	41
31...	81	45	89	41	83	33	98	60	88	42	103	55	97	56	89	48	91	39	93	50	90	46	.....	.....	85	43	91	44
Mns	68.5	41.1	71.8	39.8	64.3	31.1	72.8	46.9	73.5	38.6	78.3	44.3	76.1	48.3	66.5	38.1	69.5	35.4	69.4	42.5	73.7	36.5	.....	.....	66.1	36.0	70.4	39.4

Washington.

Date.	Aberdeen.		Blaine.		Colville.		Kosmos.		Lakeside.		North Bend.		North Yakima.		Odessa.		Port Crescent.		Seattle.		Sisprong.		Spokane.		Tacoma.		Tatoosh Island.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.	60	44	60	35	70	28	70	38	71	42	53	48	72	40	69	30	52	35	66	45	69	37	65	35	66	42	50	42
2.	53	43	63	42	74	28	65	42	70	44	54	47	76	42	71	34	54	37	61	48	76	43	67	36	65	47	56	45
3.	63	42	72	36	76	31	54	46	74	45	52	48	68	58	74	50	65	36	63	47	68	49	70	49	58	45	61	45
4.	68	44	64	48	72	47	50	46	71	54	52	48	61	51	64	46	55	38	57	50	56	46	60	47	57	49	52	48
5.	70	42	64	48	70	42	60	45	79	53	55	49	74	51	66	46	54	41	60	49	69	47	57	47	63	48	56	48
6.	75	40	65	40	82	40	83	36	78	49	56	49	81	45	84	42	58	36	72	48	76	47	75	42	73	43	51	47
7.	62	47	76	41	84	44	81	40	82	48	51	47	88	50	91	40	54	44	75	49	86	56	79	51	76	48	52	46
8.	63	48	63	45	85	38	82	37	80	51	50	48	86	51	89	44	52	42	68	48	87	58	78	54	70	46	54	44
9.	64	52	70	40	87	37	69	43	80	48	54	46	85	54	87	50	66	40	71	50	83	57	81	49	71	48	50	44
10.	60	50	63	50	74	52	62	51	70	52	55	52	76	51	76	52	57	48	60	52	74	53	62	51	63	52	56	48
11.	61	44	66	51	65	45	69	49	78	47	55	48	74	43	70	45	56	46	65	52	73	47	68	47	66	52	52	47
12.	64	48	62	50	77	37	71	43	75	45	57	48	77	42	75	41	54	42	66	50	76	53	70	45	66	49	55	47
13.	56	44	58	46	71	38	64	42	73	47	53	46	78	45	71	42	55	43	58	46	75	47	69	46	60	46	50	44
14.	52	40	58	40	60	41	59	41	65	46	50	47	67	44	73	40	52	41	54	44	69	45	59	45	59	42	50	46
15.	68	35	62	35	73	36	71	34	71	40	53	44	74	44	76	39	58	31	64	43	70	44	65	42	63	39	55	44
16.	77	41	69	42	75	34	81	34	76	43	60	48	79	38	81	40	60	37	73	45	76	43	71	39	74	42	58	48
17.	68	48	65	42	87	38	84	38	81	48	52	50	86	44	83	33	57	41	71	52	86	49	77	44	74	49	54	48
18.	58	45	61	48	75	38	69	41	76	53	51	48	77	52	84	35	56	37	63	48	76	55	72	50	64	45	54	47
19.	62	48	58	45	72	34	56	40	71	44	50	46	71	50	87	35	53	37	57	45	68	50	64	46	56	45	53	46
20.	71	52	61	36	76	29	71	39	77	48	50	46	76	41	89	34	54	34	64	46	73	40	70	44	63	45	54	46
21.	82	61	69	37	86	38	85	36	86	49	56	47	86	45	89	37	70	36	76	49	84	42	79	45	77	44	57	46
22.	71	46	72	42	91	40	72	42	92	53	54	50	94	52	90	41	55	43	71	51	92	54	86	51	69	50	52	45
23.	64	48	65	46	92	45	77	50	90	54	50	47	94	57	92	47	54	44	69	48	96	59	87	54	67	49	53	46
24.	60	46	70	44	91	42	63	48	83	56	52	49	84	60	89	50	58	43	61	53	87	60	87	54	60	52	54	47
25.	60	48	60	52	79	53	65	49	74	56	57	50	78	53	75	52	56	39	63	53	81	57	68	50	64	50	53	46
26.	62	46	65	41	65	33	65	42	71	47	56	50	73	49	69	38	62	39	63	48	72	53	63	46	66	46	53	46
27.	62	46	62	45	68	42	61	40	68	48	57	48	70	49	68	31	54	43	63	47	69	54	63	49	63	46	54	48
28.	58	47	60	46	68	30	62	39	67	41	53	50	72	42	72	33	53	48	49	77	45	66	41	58	45	53	48	
29.	67	45	66	46	76	45	72	51	75	44	57	50	80	54	89	35	58	42	67	51	80	57	71	52	66	51	57	49
30.	78	45	67	48	85	35	89	46	80	47	61	52	90	52	89	41	68	40	71	50	91	56	84	74	49	59	50	50
31.	68	46	71	42	94	40	86	40	86	51	55	52	96	59	96	54	63	40	77	54	97	67	89	55	79	52	61	49
Mean	64.9	45.8	64.7	43.5	77.4	38.7	69.9	42.0	76.5	48.2	53.9	48.3	78.8	48.6	79.9	41.2	57.2	39.8	65.4	48.7	77.8	50.6	71.7	47.0	66.1	47.0	54.2	46.5

TABLE 3.—Maximum and minimum temperatures at selected stations for May, 1910. District No. 12—Continued.

Date.	Walla Walla, Wash.		Oregon.																					
			Ashland.		Baker City.		Eugene.		Gold Beach.		Hermiston.		Marshfield.		Portland.		Prineville.		Roseburg.		The Dalles.		Vale.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	68	45	69	44	.....	.....	57	46	61	34	73	37	61	38	67	47	64	25	65	46	70	40	69	39
2.....	73	44	59	42	.....	.....	59	45	60	44	76	52	62	44	61	49	65	32	61	46	75	45	71	32
3.....	60	47	52	38	.....	.....	65	45	59	39	75	49	38	45	49	46	55	38	59	44	62	47	67	46
4.....	58	47	52	41	.....	.....	54	45	60	40	56	48	39	44	52	48	59	38	52	42	55	48	57	42
5.....	67	48	69	40	.....	.....	51	45	64	41	73	50	71	44	62	49	70	35	69	47	69	45	67	48
6.....	77	50	78	45	.....	.....	65	43	68	42	81	45	71	43	79	47	79	39	82	43	79	45	74	38
7.....	84	59	82	51	.....	.....	77	50	57	47	87	50	66	45	79	55	82	42	84	46	84	52	85	45
8.....	85	59	84	54	.....	.....	81	60	57	49	88	47	62	50	79	50	84	46	84	47	85	51	80	44
9.....	78	56	72	52	.....	.....	78	53	65	46	85	53	67	46	68	54	77	46	74	48	83	52	81	46
10.....	69	52	64	44	.....	.....	66	52	58	52	78	54	59	53	64	54	65	42	66	48	70	54	76	47
11.....	74	51	70	42	.....	.....	64	51	60	50	78	49	62	51	71	53	72	37	73	45	73	48	78	39
12.....	77	53	79	44	.....	.....	71	47	60	40	79	46	63	41	72	48	71	38	72	45	76	49	84	45
13.....	73	54	71	47	.....	.....	70	43	59	41	78	53	64	40	65	48	71	36	72	40	74	53	81	44
14.....	65	48	69	47	.....	.....	68	44	58	47	74	50	57	46	60	46	68	41	67	48	65	48	71	44
15.....	67	41	71	38	.....	.....	62	39	60	40	72	40	61	41	69	44	65	30	69	41	70	42	66	41
16.....	76	45	79	47	.....	.....	65	40	74	44	79	35	82	39	79	48	74	26	79	38	77	39	74	29
17.....	86	52	84	51	.....	.....	75	43	66	42	80	40	63	39	82	54	84	34	86	42	85	42	80	30
18.....	76	52	79	49	.....	.....	81	48	58	42	89	53	57	49	69	48	75	37	68	46	83	55	85	34
19.....	67	48	75	42	.....	.....	67	42	56	44	73	50	57	38	59	46	65	32	66	41	69	50	81	36
20.....	72	44	76	40	.....	.....	61	41	59	45	75	44	58	41	69	45	74	29	74	39	73	41	74	36
21.....	82	50	85	51	.....	.....	67	46	62	39	86	40	64	40	85	50	84	34	83	43	85	45	83	37
22.....	91	58	87	53	.....	.....	79	50	55	49	93	45	55	51	63	51	89	38	67	50	84	52	91	39
23.....	93	60	83	51	.....	.....	60	50	60	44	96	50	62	51	73	53	92	44	78	54	89	54	93	45
24.....	85	62	77	56	.....	.....	72	51	63	49	94	56	72	50	68	54	81	48	72	54	81	63	91	45
25.....	72	53	68	50	.....	.....	70	52	62	49	76	56	68	53	71	54	72	46	74	53	71	55	85	53
26.....	71	53	67	51	.....	.....	72	51	60	50	75	52	60	51	67	52	72	46	71	52	70	55	84	43
27.....	65	47	67	48	.....	.....	77	50	65	44	73	53	67	50	66	49	68	44	75	48	68	52	66	49
28.....	75	46	82	44	.....	.....	76	51	67	41	82	53	75	44	71	51	81	34	85	44	79	45	76	40
29.....	80	58	85	51	.....	.....	78	44	65	46	83	56	67	55	72	54	84	42	86	47	78	57	92	41
30.....	91	57	94	55	.....	.....	80	50	72	44	94	48	72	45	85	54	94	41	91	51	91	51	94	50
31.....	95	59	91	60	.....	.....	84	50	66	46	99	53	64	50	86	60	93	48	91	53	95	56	99	47
Mean.....	75.9	51.5	74.8	47.4	.....	.....	69.4	47.3	61.8	44.2	80.9	48.6	64.1	45.7	69.7	50.4	75.1	38.3	74.0	46.2	76.4	49.4	79.2	41.7

WEATHER, FORECASTS, AND WARNINGS FOR THE MONTH.

By Prof. H. C. FRANKENFIELD, in charge of Forecast Division.

The month opened with comparatively settled weather over the European and Asiatic areas and high barometric pressure over middle and southern latitudes of the Atlantic and Pacific oceans. In the United States a barometric depression extended from the Ohio Valley over the southern Rockies and an extensive area of high barometer and low temperature covered the Northwest. Snow was falling in the middle Rocky Mountain States and thunderstorms were reported from the middle Mississippi Valley, over the Ohio Valley, and southern Lake region. On Sunday, May 1, the following special forecast was issued:

In the United States the first half of the present week will be cool in middle and northern districts, and the frost line is likely to extend over the lower Missouri, middle Mississippi, and Ohio valleys. The weather of this period will be unsettled in middle districts from the central valleys eastward, but precipitation will hardly extend over extreme southern States. Over the western portion of the country the weather will be comparatively settled until the latter portion of the week when a disturbance of moderate strength will appear in that region and move thence eastward preceded by rising temperature and attended by showers. A disturbance of more marked intensity will cross the country from about May 9 to 13.

During the first four days of the week the central valleys depression moved eastward to the middle Atlantic coast, attended by showers in middle and northern districts, snow in the middle Plains States, and excessive rains in portions of Missouri and eastern Kansas, and the northwestern high area advanced over the Lake region and central valleys, attended by frost in the lower Missouri, middle Mississippi, and Ohio valleys and the Middle Atlantic States. On the 2d, storm warnings were issued for the Great Lakes and, beginning that date, frost warnings were issued for districts in which frost subsequently occurred.

The Long Branch (N. J.) Herald, of May 7, comments as follows regarding the frost warnings issued for that section:

The frost warnings Thursday saved, in potatoes alone, thousands of dollars to farmers in Monmouth County. All of the large farmers and some of the smaller ones are connected by telephone. Acting upon Weather Bureau advice, farmers covered their potatoes with light soil, many working half the night to preserve their crops. Many acres were thus saved. Those left uncovered were black with frost and will have to be replanted.

On the morning of the 4th the following special forecast was issued:

During the next several days fair weather with rising temperature will prevail over the eastern portion of the United States. In the central valleys and Lake region and thence to the Rockies temperature will rise rapidly. An area of showers that will set in over the Rocky Mountain and Plateau districts Thursday will advance over the Plains States Friday, the central valleys and Lakes Saturday and Sunday, and reach the Atlantic seaboard about the beginning of next week. Heavy frost will occur to-night in the interior of the North Atlantic States and the Ohio Valley, and light frost on low grounds in the interior of the Middle Atlantic States.

From the 5th, Thursday, to the 9th a barometric depression advanced from the Rockies to the Atlantic coast attended by showers that at many points in the eastern half of the country were heavy. During the middle days of the week freezing temperature occurred in the upper Lake region and frost in the Ohio Valley and Middle Atlantic and New England States. Following the cool weather a general rise in temperature occurred in the central valleys and Eastern States. The morning of the 7th, when the disturbance was central over Missouri, storm warnings were ordered for the southern Lake region.

On Sunday, May 8, the following special bulletin and forecast was issued:

The ranges and distribution of temperature in the United States during the last two weeks have been unparalleled in the history of the Weather Bureau. A cool wave during the third decade of April that was attended by freezing temperature to the southern border of Georgia, and by snow in the interior of the east Gulf States, caused innumerable damage to fruit

and vegetation in the central valleys and Southern States that in a large degree might have been avoided by a proper appreciation of the timely warnings issued by the Weather Bureau and the employment of approved frost protecting devices. The cool period was closely followed by a warm wave that produced the highest April temperatures on record at points in the north-central States and temperatures that approached the record in middle-interior and middle-eastern States. The warm wave was in turn followed during the first week in May by an extensive and persistent cold area that during three consecutive nights carried the frost line over the middle Mississippi and Ohio valleys and southern portions of the Middle Atlantic States.

Fair weather now prevails over Europe, except on the northwest coasts where rain is reported. The weather is also settled over the Asiatic area, except off the east coast where a disturbance is apparently moving northward. Over the western portion of the North American Continent the weather is fair with exceptionally high barometric pressure over Alaska. Over eastern portions of the United States low barometric pressure is attended by unsettled rainy weather. In middle and northern latitudes of the Northern Hemisphere atmospheric movements of the present week will be more active than during the preceding week.

In the United States the present week will open with rains over the eastern portion of the country. An area of high barometer and low temperature will appear over the northern Rockies Monday, overspread the middle and northern Plains States Tuesday, advance over the central valleys and Lake region Wednesday, and will reach the Atlantic States about Thursday. A disturbance will appear over the Southwest Monday or Tuesday, advance over the Plains States Tuesday and Wednesday, the central valleys and Lake region Wednesday and Thursday, and reach the Atlantic States Friday or Saturday. This disturbance promises to be attended by copious rains and thunderstorms in the central valleys and Eastern States.

During the first half of the week showers continued in the Middle Atlantic and New England States and a depression moved from the Plateau region over Texas and extended thence over the Ohio Valley. In the Northwest pressure rose with temperature falling below freezing in Minnesota and the Dakotas. In southern Kansas and the Southwest temperature rose above 90°. By Thursday morning the center of disturbance had advanced to Virginia with rain in the Ohio Valley and Tennessee and the Middle Atlantic States and the cold, high area had overspread Middle and Northern States east of the Rockies with temperature 8° to 12° below the freezing point in Minnesota and the Dakotas, freezing temperature over the northern Lake region and northern New England, and frost in the southern Lake region and the interior of New York and New England. On the morning of that day frost was forecast for the Ohio Valley, Tennessee, and the interior of the Middle Atlantic States and storm warnings were ordered for the southeast New England coast. Following the eastward advance over the ocean of the Virginia depression frost occurred Thursday night in the Ohio Valley and the interior of the Middle Atlantic States.

These conditions of high pressure, low temperature, and frosts continued until Sunday morning, May 15, the frost line extending into eastern Tennessee and western North Carolina, and frosts also occurred on the following morning in New England, New York, and portions of eastern Pennsylvania. During this period of cool and fair weather over the East, a depression from the West had moved into the Slope region attended by showers that on Monday morning, May 16, had overspread the Rocky Mountain region, the Plains and Gulf States, and the great central valleys, with some snow in Montana and Wyoming. Heavy rains fell in Arkansas, Oklahoma, and eastern Texas. From the Plains States the disturbance moved northeastward over the upper Lakes with increased intensity and better definition, attended by general rains and a temporary rise in temperature over the eastern portion of the country. On the morning of Tuesday, May 17, storm warnings were hoisted on Lakes Superior and Michigan, and during the day on Lakes Huron, Erie, and Ontario, and moderately high westerly winds were general during the night. Closely following this disturbance came another cold, high area from the

Pacific Northwest attended by frosts and freezing temperatures on Monday morning, May 16, over the interior portions of central and northern districts, west of the Rocky Mountains. These conditions were repeated on the following morning, and extended into the Dakotas and the western portions of Nebraska and Kansas. There was a reaction on the following day, Wednesday, May 18, to much higher temperature under the influence of another disturbance from the British Northwest, which by Wednesday night covered the Dakotas and Montana, and then followed a repetition in magnified form of the weather conditions of the first half of the week, namely, general rains over the eastern and southern portions of the country, with heavy downpours over the Southern States, and severe local storms in portions of Oklahoma. In the meantime pressure had risen over the North Atlantic Ocean, and the eastward movement of the western disturbance was therefore greatly retarded. As a result, it did not entirely disappear until Friday, May 28, and during the entire period showery weather continued east of the Mississippi River, except from the upper Lake region southward where the rain ended during Wednesday, May 25. After this disturbance came another moderate high area bringing with it more frosts, the frost line moving eastward until by the morning of Saturday, May 28, it had extended into West Virginia. During this entire rain period low temperature ruled, except in New England and the Middle Atlantic States, on Monday and Tuesday, May 23 and 24. Nearly normal pressure had prevailed over western Europe and low pressure over northern Asia, the western Pacific Ocean, and Alaska. On Sunday, May 22, the following special forecast was issued:

The present week will open with a continuation of the unsettled, showery weather over the eastern portion of the country, but without much rain of consequence over the extreme northern districts. By Wednesday conditions will become more settled and fair weather will predominate during the remainder of the week, but with a tendency toward a reaction at the end. In the West fair weather will prevail during the first half of the week, but in about three days a disturbance should appear on the north Pacific coast. This disturbance will develop eastward attended by more or less cloudiness and some rains over the extreme northwest, reaching the northern Plains States by the end of the week.

After Wednesday, May 25, low pressure of irregular distribution prevailed over the West, with two days of showers over the lower Missouri and lower Arkansas valleys, and temperature began to rise over the extreme West. On the morning of Saturday, May 28, a well-defined storm was central over Manitoba, and rains had set in to the southeastward over the upper Mississippi Valley. On the following morning the storm was central north of Lake Superior, and the rain area had extended over the upper Lake region, the Missouri and middle Mississippi valleys. The following special bulletin and forecast was then issued:

As indicated in the special bulletin issued last Sunday, unsettled, showery, and comparatively cool weather prevailed over the eastern portion of the country during the first half of the week just ended, followed by generally fair weather during the second half, while over the western portion conditions were reversed, except that the weather was fair over the extreme southwest, and that temperature conditions were about the same as over the east. There were frosts Tuesday and Wednesday mornings in the northwest, and Thursday and Friday mornings in portions of the upper Lake region. As forecast, the north Pacific disturbance appeared during the early days of the week, but the extensive high area overlying the eastern portion of the country checked its movement beyond the Plains States.

Over western Europe fair weather with high pressure prevailed until Saturday when a sharp fall in pressure over Iceland and the British Isles inaugurated a period of rainy weather over those sections, with prospect of its extension eastward and southeastward. Over northern Russia and northern Asia pressure distribution indicated a week of unsettled weather.

The building of the middle Atlantic high area, although temporarily suspended over the western ocean, and the depression over Iceland indicate that after showers Monday over the northeastern districts, fair weather will predominate during the coming week over the eastern portion of the country with seasonable temperatures, although cool Monday over the Lake region, and fog may be expected off the New England and New-

foundland coasts. Over the interior western districts also the weather will be generally fair without marked temperature changes, but with occasional local showers early in the week over the extreme Northwest, and a reaction toward unsettled weather near the close of the week over the Northwest, the eastern slope of the Rockies and the central Plains States.

After this bulletin was issued a ridge of moderately high pressure appeared off the Newfoundland coast, so retarding the northeastern low area that the cool and rainy weather persisted from the Lake region eastward until after the middle of the week. This type of pressure distribution is well recognized, although it can not be forecast on account of the absence of telegraphic reports from the far Northeast.

During Sunday and Monday, May 29 and 30, the rain area extended through the lower Lake region, the Ohio Valley, the Middle Atlantic States, and New England, with a marked fall in temperature, and continued in the upper Lake region with some snow along Lake Superior. Once more, as stated in the paragraph immediately preceding, a high area over the North Atlantic Ocean retarded the eastward movement of the low area, and at the end of the month the latter was still central over New England, the depression extending southward through the South Atlantic States and westward through the Lake region and the Ohio Valley, with continued rains and low temperatures over the northern districts. There was also a slight depression with showers on the last two days of the month over the lower Missouri Valley and the west Gulf States. In the West the weather had become more settled, although cool, with frosts probable on the morning of June 1 in the upper Mississippi Valley, Minnesota, and North Dakota. Temperature continued to rise over the extreme West, and on Monday, May 30, the highest temperature of record for the month of May was reached in Arizona and portions of California and Nevada. At Yuma, Ariz., the maximum temperature of 120° was the highest ever recorded in any month at a regular Weather Bureau station.

Attention is invited to the timeliness and accuracy of the frost warnings issued during the month. While of frequent occurrence, none of damaging character occurred without previous notice. These warnings were especially effective in the great fruit sections of Colorado and the Pacific Northwest. Over the latter section, while rains were comparatively frequent, there were many intervals when frost warnings were necessary, and interested parties have stated that with a free and intelligent use of the Weather Bureau observations and forecasts, no failure in the fruit crop of Oregon need ever be feared.

Average temperatures and departures from the normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since January 1.	Average departures since January 1.
New England.....	12	54.2	- 0.4	+14.0	+ 2.5
Middle Atlantic.....	15	55.9	- 1.5	+11.5	+ 2.3
South Atlantic.....	10	68.9	- 1.0	+ 4.8	+ 1.0
Florida Peninsula*.....	8	75.9	0.0	- 1.1	- 0.2
East Gulf.....	11	70.3	- 2.0	+ 1.3	+ 0.3
West Gulf.....	10	70.4	- 2.3	+ 3.5	- 0.7
Ohio Valley and Tennessee.....	13	60.7	- 4.5	+ 3.5	+ 0.7
Lower Lakes.....	10	53.7	- 3.5	+ 9.2	+ 1.8
Upper Lakes.....	12	49.0	- 3.2	+14.0	+ 2.8
North Dakota*.....	9	50.0	- 3.6	+22.5	+ 4.5
Upper Mississippi Valley.....	14	57.2	- 4.7	+ 9.8	+ 2.0
Missouri Valley.....	12	57.0	- 5.0	+15.9	+ 3.2
Northern slope.....	9	53.0	0.0	+19.1	+ 3.8
Middle slope.....	6	59.5	- 3.4	+13.7	+ 2.7
Southern slope*.....	7	68.0	- 1.8	+ 7.7	+ 1.5
Southern Plateau*.....	9	68.0	+ 2.0	+ 9.3	+ 1.0
Middle Plateau*.....	10	57.6	+ 2.4	+ 7.2	+ 1.4
Northern Plateau*.....	10	58.0	+ 2.6	+10.3	+ 2.1
North Pacific.....	7	54.8	+ 1.6	+ 2.8	+ 0.6
Middle Pacific.....	5	62.2	+ 2.6	+ 2.8	+ 0.6
South Pacific.....	4	63.9	+ 2.3	+ 8.5	+ 1.7

*Regular Weather Bureau and selected cooperative stations.

Average precipitation and departures from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
		Inches.		Inches.	Inches.
New England.....	11	2.76	82	- 0.6	- 1.4
Middle Atlantic.....	15	2.84	80	- 0.7	- 1.5
South Atlantic.....	11	3.50	92	- 0.3	- 6.8
Florida Peninsula.....	8	1.94	49	- 2.0	- 6.0
East Gulf.....	11	3.47	97	- 0.1	- 7.3
West Gulf.....	10	3.01	122	+ 0.9	- 3.2
Ohio Valley and Tennessee.....	13	4.52	125	+ 0.9	- 0.6
Lower Lakes.....	10	3.38	92	- 0.2	+ 1.1
Upper Lakes.....	12	2.94	88	- 0.4	- 1.9
North Dakota.....	9	0.86	35	- 1.6	- 2.2
Upper Mississippi Valley.....	15	3.79	90	- 0.4	- 3.0
Missouri Valley.....	12	4.36	102	+ 0.1	- 3.1
Northern slope.....	9	1.95	83	- 0.4	- 1.2
Middle slope.....	7	2.15	52	- 2.0	- 4.2
Southern slope.....	9	0.07	15	- 0.4	- 1.7
Southern Plateau.....	11	0.42	34	- 0.8	- 3.8
Middle Plateau.....	10	1.32	136	+ 0.4	- 1.3
Northern Plateau.....	7	1.90	73	- 0.7	- 1.0
North Pacific.....	7	0.22	20	- 0.9	- 5.6
Middle Pacific.....	7	0.22	20	- 0.9	- 5.6
South Pacific.....	4	0.01	2	- 0.6	- 4.9

*Regular Weather Bureau and selected cooperative stations.

Average relative humidity and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	75	- 3	Missouri Valley.....	64	- 1
Middle Atlantic.....	70	- 2	Northern slope.....	82	+ 4
South Atlantic.....	70	- 4	Middle slope.....	67	+ 6
Florida Peninsula.....	78	+ 2	Southern slope.....	57	- 4
East Gulf.....	69	- 2	Southern Plateau.....	33	+ 1
West Gulf.....	73	- 2	Middle Plateau.....	38	- 8
Ohio Valley and Tennessee.....	67	- 1	Northern Plateau.....	50	- 6
Lower Lakes.....	73	+ 2	North Pacific.....	76	0
Upper Lakes.....	70	- 2	Middle Pacific.....	67	+ 1
North Dakota.....	61	- 1	South Pacific.....	68	- 1
Upper Mississippi Valley.....	64	- 4			

Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	6.5	+ 1.0	Missouri Valley.....	5.2	+ 0.1
Middle Atlantic.....	5.2	+ 0.2	Northern slope.....	4.7	+ 0.8
South Atlantic.....	4.6	+ 0.1	Middle slope.....	5.4	+ 0.5
Florida Peninsula.....	4.2	- 0.2	Southern slope.....	4.9	+ 0.5
East Gulf.....	4.8	+ 0.1	Southern Plateau.....	2.7	- 0.0
West Gulf.....	4.9	+ 0.1	Middle Plateau.....	3.3	- 0.8
Ohio Valley and Tennessee.....	5.7	+ 0.7	Northern Plateau.....	4.1	- 1.0
Lower Lakes.....	5.6	+ 0.2	North Pacific.....	5.1	- 1.2
Upper Lakes.....	5.4	- 0.1	Middle Pacific.....	4.0	- 0.0
North Dakota.....	4.8	- 0.7	South Pacific.....	3.4	- 0.7
Upper Mississippi Valley.....	5.2	- 0.1			

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Atlanta, Ga.....	12	60	nw.	Mount Tamalpais, Cal..	16	54	ne.
Bismarck, N. Dak.....	28	50	nw.	Do.....	26	68	nw.
Canton, N. Y.....	10	50	w.	Do.....	27	52	nw.
Chicago, Ill.....	2	50	ne.	Do.....	29	51	n.
Columbia, S. C.....	22	62	sw.	Mount Weather, Va.....	3	52	w.
Fort Worth, Tex.....	21	50	sw.	North Head, Wash.....	26	64	se.
Galveston, Tex.....	23	50	w.	Point Reyes Light, Cal..	11	52	nw.
Kansas City, Mo.....	16	50	se.	Do.....	12	66	nw.
Mount Tamalpais, Cal..	1	57	nw.	Do.....	13	78	nw.
Do.....	2	54	nw.	Do.....	14	64	nw.
Do.....	3	52	nw.	Do.....	22	50	nw.
Do.....	4	50	nw.	Pueblo, Colo.....	15	50	se.
Do.....	13	50	nw.	Sheridan, Wyo.....	15	54	nw.
Do.....	15	56	ne.	Southeast Farallon, Cal..	13	58	nw.

RIVERS AND FLOODS.

By Prof. H. C. FRANKENFIELD, in charge River and Flood Division.

There were no floods of consequence during the month, and as a whole conditions were not materially different from those of the preceding month. In some localities excessive short-period rains resulted in sharp rises, but with a few exceptions none were important, and such damage as was reported occurred on May 8 and 9, and appears to have been confined to the rivers of eastern Kansas and western Missouri. Flood stages were barely reached at Ottawa, Kans., on the Marais des Cygnes River and at Brunswick, Mo., on the Grand River, while on the Osage River the crests were a trifle below the flood stages. The rains that caused these rises were very heavy and under ordinary circumstances would have been sufficient to cause severe floods. The failure was due to the antecedent conditions as set forth in the MONTHLY WEATHER REVIEW for April, 1910. Some growing crops along the Marais des Cygnes and upper Neosho rivers were flooded, and railroad traffic somewhat impeded for a short time. The total losses did not exceed a few thousand dollars. Warnings were issued for these rises at the proper time. As these flood waters, with the exception of those from the Neosho River, passed into the Missouri River there was also a decided rise in the latter river east of Kansas City, as well as in the Mississippi River, from the mouth of the Missouri southward, the crest reaching St. Louis on May 10, Cairo, on May 12 and 13, Memphis, on May 15, and New Orleans on May 24. They did not approximate flood stages, however, except in the Missouri River, between Glasgow and Boonville, Mo.

The Illinois River was generally above flood stage with crests of 21 feet at La Salle, Ill., on May 4, 15.6 feet at Peoria, Ill., on May 8, and 12.9 feet at Beardstown, Ill., from May 14 to 19, inclusive, flood stages being at 18, 14, and 12 feet, respectively.

There were two well-marked rises in the Ohio River below the mouth of the Great Kanawha River, but only to medium stages, and as a rule the mean stages were lower than usual for the season of the year.

Nothing of interest occurred along the Cumberland and Tennessee rivers, except a single sharp rise during the last week of the month, caused by the general and heavy rains from May 20 to 25, inclusive.

The heavy rain area also extended westward over the watersheds of the lower Arkansas and lower Red rivers, with consequent marked rises in the rivers, but no flood stages except in the upper Black River of northeastern Arkansas.

The general rains from May 7 to 9, inclusive, were quickly followed by rapid rises in the rivers of the Carolinas, Georgia, and northeastern Alabama, with some flood stages in the smaller streams of South Carolina, but no damage resulted. As a matter of fact the rises were of distinct benefit to water-power interests.

The same conditions prevailed during the third week of the month over the lower Pearl and the Pascagoula rivers of Mississippi, with corresponding advantage to the lumber interests.

Heavy general rains over eastern Texas from May 13 to 23, inclusive, were attended by the usual quick response on the part of the Trinity, Brazos, the lower Colorado, and the Guadalupe rivers, but flood stages were not reached except along the lower Guadalupe River. Following the heavy rains of the latter part of April over the upper Rio Grande watershed came a moderate flood over that portion of the river flowing through southern New Mexico, with crests of 13.3 feet at San Marcial, N. Mex., on May 21, and 15.6 feet at El Paso, Tex., from

May 5 to 7, inclusive, 2.3 feet and 0.6 foot, respectively, above flood stages. Warnings for this flood were first issued on April 27, and the crest stage at El Paso was exactly as forecast.

The rivers of California fell generally during the month, and by the end the snow had entirely disappeared from the summit of the Sierras, 15 to 30 days earlier than usual. This shortage of water was forecast nearly two months before by the official in charge of the local office of the Weather Bureau at Sacramento.

The annual rise of the Columbia River ended about the middle of the month with very moderate stages, owing to the early disappearance of the winter snows and favorable temperature conditions. At The Dalles, Oreg., the crest stage was

33.1 feet, on May 14, 6.9 feet below the flood stage, while at Portland, on the Willamette River, the crest of 19.1 feet, 4.1 feet above flood stage, occurred on May 15 and 16. The river, however, was above flood stage throughout the month, and warnings of the coming of the high water were first issued on April 27.

Hydrographs for typical points on several principal rivers are shown on Chart I. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.

SPECIAL PAPERS ON GENERAL METEOROLOGY.

PROF. EDWARD B. GARRIOTT. 1853--1910.

By H. E. WILLIAMS, Assistant Chief of Bureau.

In the death, at Washington, D. C., on May 13, 1910, of Prof. Edward B. Garrriott, the Weather Bureau lost a most efficient and highly esteemed official. Professor Garrriott was born in Lockland, Ohio, March 17, 1853, and was educated in the public schools and Washington University of St. Louis, Mo. He entered the Service as a second class private in the Signal Corps on May 18, 1874, was promoted to first class private and sergeant, and on July 1, 1888, was transferred to the civil list as meteorological clerk. He was subsequently promoted to the grades of clerk, class four, forecast official, and professor of meteorology. He served as assistant at Portland, Me., and as official in charge at Milwaukee, Buffalo, Rochester, Pittsburg, New York City, Louisville, and Chicago, and as forecast official, Chief of Forecast Division, and supervising forecaster at the Central Office. He was a member of numerous boards, author of a number of valuable publications, was several times commended by the Chief of Bureau for efficient service, and attained high rank as a forecaster.

Among his more important papers were:

- Types of storms in January. 4p. 25 cts. Mo'ly Weather Rev., 1895, 23:9.
- Cold waves. Mo'ly Weather Rev., 1895, 23:12, 334.
- High areas of the north Pacific coast in September, October, and November. 1p. 3 cts. Mo'ly Weather Rev., 1895, 23:249.
- High areas north of the St. Lawrence Valley in October, November, and December. 1p. Mo'ly Weather Rev., 1895, 23:292.
- Wind-barometer table. 1p. Mo'ly Weather Rev., 1897, 25:204.
- West Indian hurricanes. W. B. Bul. "H." Washington, 1900. 69p. 7 cts. 4°.
- Weather folk-lore and local weather signs. W. B. Bul. 33. Washington, 1903. 153p. 21 cts.
- Storms of the Great Lakes. W. B. Bul. "K." Washington, 1903. 9p. 968 cts. 4°.
- Relation of American weather to low pressure over the British Isles. Mo'ly Weather Rev., 1903, 31:7479a.
- Long-range weather forecasts. W. B. Bul. 35. Washington, 1904. 68p.
- Long-range weather forecasts. Proc. 3d Conven. W. B. Officials. Washington, 1904. p. 38-42.
- Possible extension of the period of weather forecasts. 1p. Mo'ly Weather Rev., 1906, 34:22.
- Cold waves and frost in the United States. W. B. Bul. "P." Washington, 1906. 22p. 328 cts. 4°.
- Weekly weather forecasts. 1p. Mo'ly Weather Rev., 1908, 36:435.

His evenness of temper, genial disposition, cheerful and unhesitating compliance with all official instructions and requests, and marked ability in the discharge of his duties gained for him the sincere regard of all officials and employees with whom he was brought in contact. He leaves an enviable record in the Bureau and a most grateful memory in the hearts of all of his friends.

The following resolutions were passed at a meeting of the Weather Bureau employees on duty at the Central Office in recognition of his life and labors:

Whereas, it has pleased an almighty and inscrutable Providence to remove Professor Edward Bennett Garrriott from the activities of a long and useful career; and,

Whereas, in his death the United States Weather Bureau has suffered the loss of an official known and honored for his scholarly and scientific attainments; and,

Whereas, its members have met with an equal loss in the passing of one who had a heartfelt interest in and friendship for each, from the highest to the lowest, be it

Resolved, That we, the members of the United States Weather Bureau, do hereby extol the high qualities of our late associate as a Government official, a genial gentleman, and a faithful and loyal friend, as well as express a sense of the deep loss that is felt because of his death, not only at the Central Office but throughout the entire service; and, be it also

Resolved, That a copy of these resolutions be furnished to the bereaved wife and daughter of our late associate and friend, with expressions of our sympathy and condolence in this the hour of their sorrow,

WILLIS L. MOORE,
HENRY E. WILLIAMS,
H. C. FRANKENFIELD,
EDWARD C. EASTON,

Committee.

Washington, D. C., May 14, 1910.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZBUGH TALMAN, Librarian.

The following have been selected from among the titles of books recently received, as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Most of them can be lent for a limited time to officials and employees who make application for them. Anonymous publications are indicated by a —.

Batavia. Royal magnetical and meteorological observatory.

Report on cloud-observations at Batavia during the international cloud-year, 1896-1897. Appendix 2 to volume 30 of the observations. Utrecht. 1910. 32 p. f°.

— Blue Hill meteorological observatory, 1885-1910. Boston. 1910. 3 p. 8°. (Reprinted from the Technology review v. 12, no. 2.)

Brockett, Paul.

Bibliography of aeronautics. Washington. 1910. xiv, 940 p. 8°. (Smithsonian miscellaneous collections, v. 55.)

Denmark. Danske meteorologiske Institut.

Nautisk-Meteorologisk Aarbog. 1909. Kjöbenhavn, 1910. xlv, 154 p. f°.

Finland. Finske meteorologiske Centralanstalt.

Meteorologisches Jahrbuch. Bd. 3, 1903. Helsingfors. 1910. ix, 117 p. f°.

Finland. Finske Meteorologiske Central-Institut.

Observations météorologiques publiées par l'Institut Météorologique central de la Société des sciences de Finlande. 1899-1900. Helsingfors. 1909. 126 p. f°.

Golitsyn, Boris Borisovich.

Ueber die Bestimmung des Dämpfungsverhältnisses stark gedämpfter Horizontalpendeln. St. Petersburg. 1910. 21 p. 4°.

Great Britain. National physical laboratory.

Report of the observatory department, Richmond, Surrey, and of the observatory, Eskdalemuir, Langholm, Dumfriesshire, 1909. With appendices. Teddington, 1910. 62 p. 4°.

Greifswald. Meteorologische Station.

Die Ablesungen der meteorologischen Station Greifswald. 1908. Greifswald. n. d. 50 p. 8°.

Same. 1909. Greifswald. 1910. 50 p. 8°.

- Havana.** Observatorio meteorologico, magnetico y seismico del Colegio de Belen. Año de 1909. Habana. 1910. f°.
- Hegyfoky, J.** Die jährliche Periode der Niederschläge in Ungarn. Budapest. 1909. v, 129 p. f°. (Officielle Publicationen der dem Königl. ungar. Ackerbau-Minister unterstehenden Königl. ung. Reichsanstalt für Meteorologie und Erdmagnetismus. 1909. Band 8.)
- Korhonen, W. W.** Schnee- und Eisverhältnisse in Finland im Winter 1901-1902. Helsingfors. 1910. 47 p. f°. (Beilage zum Finländischen meteorologischen Jahrbuch, Jahrg. 1902.)
- Mizusawa.** International latitude observatory. Annual report of the meteorological and the seismological observations. [Mizusawa.] 1910. 36 p. f°.
- Strassburg.** Zentralbureau der Internationalen seismologischen Association. Katalog der im Jahre 1906 registrierten seismischen Störungen. 1. Teil. Die schwächeren und weniger ausgeprägten Störungen (3 B). Von Siegmund Szirtes. Strassburg. 1910. iv, 109 p. 4°. (Veröffentlichungen...)
- Sundell, A. F.** Barometervergleichen ausgeführt in den Jahren, 1886-1887 an verschiedenen meteorologischen Centralstellen. Helsingfors. 1887. 64 p. 4°. (Abdruck aus "Acta Societatis scientiarum Fennicae," Tom. 16.)
- Ueber ein neues schweres Horizontalpendel mit mechanischer Registrierung für seismische Stationen zweiten Ranges. St. Petersburg. 1910. 75 p. 4°.
- Vergleichen zwischen Normalbarometern. Helsingfors. 1906. 59 p. 4°. (Acta Societatis scientiarum Fennicae. Tom. 34. no. 2.)

RECENT PAPERS BEARING ON METEOROLOGY AND SEISMOLOGY.

C. FITZHUGH TALMAN, Librarian.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau. Unsigned articles are indicated by a —.

- American forestry.* Washington. v. 16. June, 1910.
- Rothrock, J. T.** Some observations on forests and water-flow. p. 349-351.
- American geographical society. Bulletin.* New York. May, 1910.
- Stefánsson, V.** Underground ice in northern Alaska. p. 337-345.
- American philosophical society. Proceedings.* Philadelphia. v. 49. Jan.-April, 1910.
- Hobbs, Wm. Herbert.** Characteristics of the inland-ice of the Arctic regions. p. 57-129.
- Engineering news.* New York. v. 63. 1910.
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CONDENSED CLIMATOLOGICAL SUMMARY.

In the following table are given, for the various sections of the Climatological Service of the Weather Bureau, the average temperature and rainfall, the stations reporting the highest and lowest temperatures with dates of occurrence, the stations reporting the greatest and least monthly precipitation, and other data, as indicated by the several headings.

The mean temperatures for each section, the highest and

lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperature and precipitation are based only on records from stations that have ten or more years of observations. Of course the number of such records is smaller than the total number of stations.

Temperature and precipitation by sections, May, 1910.

Section.	Temperature—in degrees Fahrenheit.						Precipitation—in inches and hundredths.					
	Section average.	Departure from the normal.	Monthly extremes.				Section average.	Departure from the normal.	Greatest monthly.		Least monthly.	
			Station.	Highest.	Date.	Station.	Lowest.	Date.	Station.	Amount.	Station.	Amount.
Alabama.....	68.9	+ 2.4	Lucy.....	98	30	2 stations.....	34	14	Guntersville.....	8.54	Lucy.....	0.47
Arizona.....	72.5	+ 2.7	2 stations.....	121	29†	Flagstaff.....	22	5	Chilsons Mill.....	0.39	31 stations.....	0.00
Arkansas.....	66.0	+ 3.7	Junction.....	95	30	Eureka Springs.....	31	7	Conway.....	10.39	Earl.....	4.20
California.....	65.5	+ 3.2	3 stations.....	121	30	Tamarack.....	6	5	Monumental.....	3.19	Many stations.....	0.00
Colorado.....	51.2	+ 0.5	Hoehe.....	98	31	Breckenridge.....	6	17	Corona.....	5.27	Mancos.....	T.
Florida.....	75.1	+ 0.4	Huntington.....	100	23	Milligan.....	41	18	Arcadia.....	7.88	2 stations.....	T.
Georgia.....	69.8	+ 2.1	St. George.....	100	30	Diamond.....	33	14	Dahlonega.....	11.33	Valdosta.....	0.20
Hawaii.....	69.6	— 2.1	Molokai Ranch.....	91	29	Huamula, Hawaii.....	34	9†	Hakalau (Maui).....	26.60	Waipae R'ch. Maui.....	0.00
Idaho.....	54.9	+ 2.0	Garnett.....	107	31	Stone.....	19	17	Burke.....	4.38	Rupert.....	0.17
Illinois.....	58.0	+ 4.4	Equality.....	89	11	Lanark.....	24	5	Morrisonville.....	8.65	Dakota.....	2.32
Indiana.....	57.4	+ 4.7	Mount Vernon.....	90	29	Auburn.....	27	5†	Marengo.....	6.80	Kokomo.....	2.31
Iowa.....	55.4	+ 4.7	Mount Pleasant.....	89	8	Washta.....	18	3	Lamoni.....	6.91	Plover.....	1.29
Kansas.....	60.0	+ 4.2	Ashland.....	99	10	Blakeman.....	24	3	Clay Center.....	10.87	Fargo.....	0.91
Kentucky.....	61.1	+ 4.6	2 stations.....	89	2†	Farmers.....	30	15	Edmonton.....	9.00	Pikeville.....	2.18
Louisiana.....	72.6	+ 1.2	Lawrence.....	98	30	Ferriday.....	36	10	Robeline.....	13.00	Lawrence.....	2.64
Maryland and Delaware.....	60.2	+ 2.4	5 stations.....	90	1†	Westernport, Md.....	28	6	Annapolis, Md.....	6.39	Solomons, Md.....	1.57
Minnesota.....	51.6	+ 3.0	Morris.....	86	19	2 stations.....	13	14†	St. Joseph.....	7.07	Owosso.....	0.58
Mississippi.....	69.4	+ 2.9	6 stations.....	94	12†	Floodwood.....	15	3	Grand Meadow.....	3.70	Beardsley.....	0.39
Missouri.....	60.1	+ 4.6	Warsaw.....	94	20	Duck Hill.....	37	14	Natchez.....	11.64	Columbus.....	1.66
Montana.....	53.4	+ 1.5	3 stations.....	92	29†	Red Lodge.....	11	2	Kansas City.....	10.92	Caruthersville.....	2.03
Nebraska.....	55.2	+ 3.7	Gothenburg.....	95	8†	2 stations.....	20	3†	Garnett.....	8.60	Meadow Creek.....	0.63
Nevada.....	58.9	+ 4.4	2 stations.....	114	30†	Potts.....	11	5	Fairbury.....	7.37	Fort Robinson.....	0.58
New England*.....	54.7	+ 0.5	Westboro, Mass.....	92	24	2 stations.....	22	6	Wells.....	2.12	10 stations.....	0.00
New Jersey.....	60.0	+ 0.4	Trenton.....	94	24	Layton.....	27	6	Patten, Me.....	6.68	Jacksonville, Vt.....	0.67
New Mexico.....	61.3	+ 1.5	Alma.....	105	29	Elizabethtown.....	18	17	Dover.....	4.25	Asbury Park.....	1.48
New York.....	54.1	+ 1.9	Bedford.....	87	24	Morehouseville.....	19	6	Valley.....	3.50	12 stations.....	0.00
North Carolina.....	64.9	+ 2.4	2 stations.....	96	3†	Banners Elk.....	22	15	Greenfield Center.....	6.80	New York City.....	1.66
North Dakota.....	50.7	+ 2.5	Coal Harbor.....	94	28	2 stations.....	10	12†	Newbern.....	11.80	Reidsville.....	2.38
Ohio.....	56.0	+ 4.9	2 stations.....	88	1†	Bladensburg.....	21	6	Crosby.....	2.21	Jamestown.....	0.15
Oklahoma.....	65.5	+ 2.2	3 stations.....	100	10†	2 stations.....	34	2†	Milligan.....	6.21	Sandusky.....	1.89
Oregon.....	57.2	+ 3.3	Huntington.....	104	31	Range.....	14	4†	Fairland.....	8.50	Woodward.....	0.53
Pennsylvania.....	56.8	+ 2.8	2 stations.....	88	1†	Claysville.....	24	6	Cascade Lock.....	5.23	Merrill.....	0.07
Porto Rico.....	75.8	+ 1.6	4 stations.....	93	13†	Cayey.....	51	3	Gordon.....	6.08	Huntingdon.....	1.73
South Carolina.....	69.8	+ 1.7	Walterboro.....	99	22	2 stations.....	40	15	Las Marias.....	17.55	Ponce.....	0.18
South Dakota.....	53.4	+ 3.2	Leellie.....	91	18	Frederic.....	18	2	Liberty.....	16.28	Charleston.....	1.01
Tennessee.....	63.4	+ 4.3	9 stations.....	89	11†	Mountain City.....	25	15	Deadwood.....	3.55	Eureka.....	0.42
Texas.....	72.4	+ 0.9	Zapata.....	107	22†	Nazareth.....	32	4	Benton.....	9.14	Savannah.....	2.28
Utah.....	57.8	+ 2.7	Hite.....	104	31	Grayson.....	15	16	Cuero.....	12.40	2 stations.....	T.
Virginia.....	61.0	+ 3.3	2 stations.....	92	3	Burkes Garden.....	19	15	Corinne.....	2.45	5 stations.....	0.00
Washington.....	58.1	+ 2.5	Kennewick.....	104	31	2 stations.....	24	1	New Castle.....	5.96	Woodstock.....	2.06
West Virginia.....	57.9	+ 4.4	Romney.....	96	22	Bayard.....	19	6	Goat Lake.....	5.47	Ephrata.....	0.00
Wisconsin.....	51.2	+ 3.7	Muscoda.....	82	20	Long Lake.....	12	4	Bancroft.....	5.87	Nuttallburg.....	1.55
Wyoming.....	48.8	+ 1.1	3 stations.....	90	29	2 stations.....	8	2†	Minocqua.....	2.30	Fond du Lac.....	0.31
									Wiley.....	4.45	Border.....	T.

*Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

†Other dates also.

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TABLE 1.—Climatological data for U. S. Weather Bureau stations, May, 1910.

Stations.	Elevation of instruments.			Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.										Precipitation, in inches.				Wind.											
	Barometer above sea level, feet.	Thermometers above ground.	Anemometer above ground.	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hrs.	Departure from normal.	Mean max. + mean min. + 2.	Departure from normal.	Maximum.	Date.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Total.	Departure from normal.	Days with .01 or more.	Total movement, miles.	Prevailing direction.	Maximum velocity.									
																							Miles per hour.	Direction.	Date.							
New England.																																
Eastport	76	67	85	29.86	29.95	- .01	54.3	+ 0.4	69	27	55	31	6	42	25	45	42	75	2.76	- 0.6	12	7,682	s.	36	ne.	30	4	14	13	6.7	1.4	
Greenville	1,070	66		28.79	29.95		49.4	+ 1.4	69	27	55	31	6	42	25	45	42	75	2.76	- 0.6	12	7,682	s.	36	ne.	30	4	14	13	6.7	1.4	
Portland, Me.	103	81	117	29.83	29.95	- .02	52.6	+ 0.9	72	29	60	34	6	46	25	48	43	74	1.65	- 2.2	15	6,706	d.w.	27	w.	10	4	12	17	7.0		
Concord	288	70	79	29.64	29.95	- .03	54.6	+ 1.1	86	24	66	29	6	44	42	48	44	72	1.81	- 2.0	14	6,706	s.	39	s.	18	2	14	15	7.2		
Burlington	404	11	48	29.51	29.95	- .02	53.2	+ 0.7	79	24	62	30	6	44	42	48	44	72	3.42	+ 0.6	13	7,962	s.	32	nw.	6	5	9	17	6.8		
Northfield	876	16	70	29.01	29.96	- .01	50.9	+ 2.6	77	24	61	25	6	40	43	48	44	72	1.51	+ 0.7	14	6,026	sw.	27	nw.	10	5	9	17	6.8		
Boston	123	115	188	29.82	29.96	- .02	53.7	+ 0.6	86	24	65	40	6	50	28	51	46	70	1.02	+ 2.5	9	7,243	sw.	36	sw.	7	12	8	11	5.7		
Nantucket	12	14	90	29.95	29.96	- .03	53.2	+ 0.2	68	17	59	37	5	48	20	50	47	83	3.36	+ 0.7	14	11,242	sw.	37	w.	19	9	6	16	6.2		
Block Island	26	11	46	29.94	29.97	- .02	53.6	+ 0.7	66	21	58	41	5	49	16	50	48	85	3.36	+ 0.4	13	9,761	sw.	37	w.	19	9	6	16	6.2		
Narragansett	9						54.2	+ 0.5	72	26	62	35	6	47	27	50	46	72	2.90	- 0.6	18	7,220	nw.	35	nw.	10	3	14	14	6.6		
Providence	160	141	165	29.80	29.97	- .01	56.4	+ 2.1	75	29	65	38	6	48	28	50	46	72	2.49	- 1.0	15	5,550	s.	27	w.	10	6	10	15	6.4		
Hartford	150	122	140	29.79	29.97	- .01	58.4	+ 0.9	84	24	68	38	15	49	27	51	45	68	4.34	+ 0.7	14	6,447	se.	25	nw.	28	10	10	11	5.4		
New Haven	106	116	155	29.84	29.96	- .03	58.0	+ 0.4	77	28	66	42	6	50	27	51	45	68	7.0	2.24	+ 0.7											
Mid. Atlantic States.																																
Albany	97	102	115	29.85	29.96	- .02	58.1	+ 0.8	85	24	68	39	13	49	34	51	46	68	3.49	+ 0.5	13	6,645	nw.	30	se.	1	18	10	18	3	4.7	
Binghamton	871	78	88	29.05	29.98	- .00	54.7	+ 2.3	80	24	65	32	16	44	35	46	46	65	1.66	+ 1.5	11	8,211	nw.	38	nw.	19	8	9	14	6.2		
New York	314	108	350	29.63	29.96	- .03	60.2	+ 0.9	81	24	68	44	5	53	25	52	46	66	4.11	+ 0.4	16	5,240	nw.	33	nw.	24	7	13	11	5.7		
Harrisburg	374	94	104	29.60	30.00	+ .02	60.1	+ 1.6	83	24	69	40	16	51	28	52	46	66	4.11	+ 0.4	16	5,240	nw.	33	nw.	24	7	13	11	5.7		
Philadelphia	117	116	184	29.87	30.00	+ .01	62.4	+ 0.2	86	24	70	44	5	54	24	55	50	68	2.13	+ 1.1	12	7,715	nw.	32	sw.	24	8	9	14	6.2		
Seranton	805	111	119	29.13	29.99	+ .01	57.4	+ 1.4	83	24	68	34	6	47	34	52	47	72	2.96	- 0.5	14	5,488	sw.	46	sw.	3	9	12	10	5.4		
Atlantic City	32	37	48	29.94	30.00	+ .02	58.4	+ 0.9	82	29	66	42	6	52	27	53	48	73	1.98	- 1.0	14	6,210	sw.	24	s.	10	10	9	12	5.5		
Cape May	17	9	56	30.00	30.02	+ .03	59.3	+ 0.7	78	29	66	44	6	53	20	54	50	76	1.88	- 1.1	13	6,751	s.	30	s.	25	8	14	9	4.6		
Baltimore	123	100	113	29.87	30.00	+ .01	62.2	+ 2.0	85	24	70	44	16	54	26	54	48	65	2.95	- 0.6	16	5,621	nw.	31	sw.	24	7	16	8	5.3		
Washington	112	62	85	29.88	30.00	- .00	61.4	+ 2.8	87	24	72	39	7	51	35	54	49	67	3.43	- 0.4	16	5,097	nw.	30	sw.	24	13	14	4	4.7		
Cape Henry	18	9	58																													
Lynchburg	681	83	88	29.28	30.02	+ .02	62.7	+ 3.2	89	1	74	37	15	52	38	58	54	75	2.78	- 1.2	13	2,845	nw.	23	sw.	24	9	19	3	4.7		
Mount Weather	1,235	10	54	28.18	29.98	- .02	56.5	+ 3.0	80	1	65	35	6	48	30	51	46	72	2.40	- 1.4	14	12,044	nw.	52	w.	3	10	13	8	5.0		
Norfolk	91	102	111	29.93	30.03	+ .03	65.2	+ 1.0	90	3	74	45	6	57	30	57	53	69	3.48	- 0.6	10	6,918	s.	32	s.	24	15	9	7	4.2		
Richmond	144	189	197	29.87	30.02	+ .03	63.8	+ 3.5	88	3	75	41	7	53	31	57	53	67	2.67	- 1.2	15	5,996	s.	32	w.	30	8	20	3	4.9		
Wytheville	2,293	40	47	27.67	30.02	+ .03	57.2	+ 4.2	82	2	68	28	15	47	37	57	48	74	2.56	- 1.4	14	3,999	w.	28	w.	30	16	5	10	4.4		
S. Atlantic States.																																
Asheville	2,255	53	75	27.71	30.04	+ .05	66.0	+ 2.7	85	1	70	34	15	48	36	53	50	70	4.65	+ 0.9	16	5,662	nw.	26	n.	12	14	6	11	4.8		
Charlotte	773	68	76	29.21	30.04	+ .05	66.4	+ 2.0	89	1	76	41	15	57	29	57	50	61	4.26	+ 0.3	10	5,468	sw.	29	w.	30	13	10	8	4.7		
Hatteras	11	12	47	30.03	30.04	+ .03	67.0	- 0.1	82	2	73	47	6	61	22	62	59	80	3.02	- 1.1	9	11,197	sw.	39	n.	12	20	5	6	3.7		
Manteo	12	12	46				64.8	- 0.1	86	2	72	37	6	56					9.30	+ 5.2	7											
Raleigh	376	103	110	29.63	30.03	+ .04	66.0	+ 1.3	90	1	77	42	15	56	31	57	50	61	3.92	- 1.0	10	6,085	sw.	39	sw.	24	15	11	5	4.2		
Wilmington	78	81	91	29.97	30.05	+ .04	68.8	- 0.3	90	1	78	48	6	60	28	62	59	76	4.61	+ 0.6	9	6,884	sw.	30	sw.	8	9	17	5	4.7		
Charleston	48	14	92	29.60	30.05	+ .04	72.3	- 0.1	92	30	79	54	15	66	23	64	61	73	1.01	- 2.5	6	8,519	s.	35	nw.	12	11	15	5	5.0		
Columbia, S. C.	351	41	92	29.66	30.03	+ .03	70.0	- 1.8	91	3	80	45	15	60	30	60	54	63	2.20	- 1.0	10	5,589	sw.	52	sw.	22	9	14	8	5.1		
Augusta	180	89	97	29.57	30.04	+ .05	70.7	- 1.5	89	3	81	50	15	61	30	61	55	62	2.23	- 1.0	11	4,824	se.	40	nw.	12	11	13	7	5.0		
Savannah	65	150	194	30.00	30.07	+ .07	72.8	+ 0.3	92	4	82	54	15	64	26	64	60	71	1.17	- 1.8	7	9,226	s.	43	s.	24	13	12	6	4.6		
Jacksonville	43	96	129	30.01	30.06	+ .06	74.9	+ 0.7	92	30	84	60	14	66	24	67	64	76	2.18	- 2.1	7	7,277	s.	48	s.	8	11	17	3	4.5		
Florida Peninsula.																																
Jupiter	28	10	46	30.02	30.05	+ .07	76.9	- 0.1	91	5	82	65	5	70	26	70	68	79	4.26	- 0.5	11	9,072	se.	36	sw.	25	7	23	1	4.2		
Key West	22	16	53	30.00	30.02	+ .05	78.4	- 0.6	87	23	84	68	4	73	14	72	69	79	0.86	- 2.5	5	7,424	e.	24	e.	16	14	15	2	4.1		
Sand Key	25	41	71				76.0	+ 0.5	89	22	85	39	14	67	25	69	66	77	1.76	- 1.2	6	6,151	w.	33	se.	21	15	9	7	3.6		
Tampa	33	79	96	30.01	30.05	+ .06	70.3	+ 2.0										69	3.47	- 0.1												
East Gulf States.																																
Atlanta	1,174	190	216	28.82	30.05	+ .06	66.7	- 2.8	85	2	76	46	14	58	25	58	52	66	6.39	+ 3.3	10	8,652	nw.	60	nw.	12	12	9	10	5.0		
Macon	370	78	87	29.66	30.05	+ .06	70.3	- 0.8	89	30	81	48	14	60	31	64	59	67	2.53	- 0.4	10	4,700	s.	40	sw.	22	13	10	8	4.3		
Thomasville	273	8	57	29.73	30.04	+ .05	73.6	- 0.4	95	30	86	51	15	61	33	64	59	67	2.35	- 1.7	7	4,387	sw.	24	w.	24	16	12	3	3.8		
Pensacola	56	140	183	29.98	30.04	+ .05	72.0	- 2.8	90	30	78	59	13	65	20	68	63	67	2.50	- 0.2	8	9,594	sw.	40	n.	23	14	10	7	4.3		
Annisson	741	9	37	29.28	30.07	+ .08	66.0	- 2.4	86	11	78	39	14	54	33				4.88	+ 1.8	13	4,256	n.	31	w.	20	12	5	14	5.8		
Birmingham	700	11	48	29.29	30.05	+ .07	68.1	- 3.5	87	29	78	44	14	58	28	60	56	70	4.65	+ 1.6	12	4,987	nw.	32	s.	22	9	7	15	5.7		
Mobile	57	98	106	29.98	30.04	+ .05	72.4	- 1.2	91	30	81	56	14	64	27	65	62	74	2.29	- 1.7												

TABLE I.—Climatological data for U. S. Weather Bureau stations, May, 1910—Continued.

Stations.	Elevation of instruments.			Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.										Precipitation, in inches.			Wind.			Total snowfall.									
	Barometer above sea level, feet.	Thermometers above ground.	Anemometer above ground.	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hrs.	Departure from normal.	Mean max. + mean min. + 2	Departure from normal.	Maximum.	Date.	Mean minimum.	Date.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Total.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.		Maximum velocity.		Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness during daylight, tenths.			
																								Miles per hour.	Direction.							
Upper Lake Region.																																
Alpena	609	12	92	29.33	30.00	+	.03	42.0	- 3.3	74	29	57	31	5	38	34	43	38	70	2.94	- 0.4	11	8,140	nw.	38	nw.	18	9	9	13	5.4	T.
Escanaba	612	40	82	29.35	30.02	+	.05	46.1	- 3.9	66	18	54	26	14	39	26	41	35	69	1.60	- 1.8	11	7,767	s.	30	n.	16	7	8	4.1		
Grand Haven	632	54	92	29.32	30.01	+	.05	49.3	- 5.5	73	21	57	31	14	41	30	45	41	73	4.50	+ 1.2	12	8,069	nw.	36	sw.	21	12	9	10	5.0	
Grand Rapids	707	127	162	29.25	30.02	+	.05	52.8	- 6.2	80	21	63	33	14	43	32	47	41	67	3.88	+ 0.5	12	8,192	nw.	39	w.	29	8	11	12	5.9	
Houghton	668	66	74	29.29	30.03	+	.06	47.0	- 2.7	73	27	56	25	14	38	33				3.69	+ 0.4	13	5,327	nw.	29	w.	29	10	12	9	5.4	T.
Marquette	734	77	116	29.22	30.04	+	.07	46.8	- 2.2	78	27	55	27	13	39	36	42	38	73	2.55	- 0.8	10	8,393	w.	40	s.	28	7	14	10	5.8	0.3
Port Huron	638	70	120	29.30	30.03	+	.02	50.6	- 3.1	78	22	59	32	12	42	33	46	41	72	2.96	- 0.3	11	8,384	n.	37	s.	17	9	9	13	5.8	
Sault Sainte Marie	614	11	61	29.31	30.01	+	.06	45.6	- 2.1	74	28	54	28	14	37	37	42	37	75	3.63	+ 0.4	9	7,981	nw.	40	w.	18	11	7	13	5.6	T.
Chicago	823	140	310	29.14	30.03	+	.07	53.4	- 3.1	78	22	60	38	3	47	29	48	44	74	4.67	+ 1.3	13	10,066	ne.	50	ne.	2	8	13	10	5.5	
Milwaukee	681	122	139	29.30	30.04	+	.08	50.6	- 3.0	76	19	58	34	3	43	26	45	40	72	2.64	- 0.8	10	7,805	ne.	39	ne.	2	12	8	11	5.1	T.
Green Bay	617	49	86	29.34	30.00	+	.05	51.6	- 2.9	77	19	62	31	14	42	30	46	40	66	1.86	- 1.7	10	7,845	ne.	44	w.	29	6	12	13	6.3	
Duluth	1,133	11	47	28.81	30.04	+	.08	46.8	- 1.8	74	27	56	28	3	37	30	40	32	61	1.18	- 2.3	9	9,121	ne.	47	nw.	30	9	12	10	5.4	T.
North Dakota.																																
Moorhead	940	8	57	29.03	30.06	+	.12	51.4	- 3.4	81	14	65	24	12	38	41	45	38	65	0.92	- 2.0	7	7,805	nw.	39	s.	14	20	5	6	3.2	
Bismarck	1,674	8	57	28.26	30.06	+	.14	52.3	- 2.9	84	18	66	23	12	39	43	45	37	60	0.71	- 1.8	9	10,057	s.	50	nw.	28	11	14	6	5.0	
Devils Lake	1,482	11	44	28.45	30.03	+	.09	49.0	- 3.7	81	27	62	21	12	36	40	42	34	59	0.91	- 1.3	9	9,950	nw.	46	w.	28	11	13	7	4.9	
Williston	1,872	14	56	28.02	30.00	+	.07	50.6	- 3.7	80	27	64	24	1	37	41	44	36	60	1.18	- 1.1	7	7,653	n.	48	ne.	15	8	11	12	6.0	
Upper Miss. Valley.																																
Minneapolis	918	102	308	29.12	30.03	+	.09	54.8	- 3.0	79	19	65	34	3	45	31				1.39	- 2.5	6	9,508	n.	41	w.	29	13	7	11	5.4	
St. Paul	837	171	179	29.12	30.03	+	.09	55.2	- 3.0	79	18	66	32	3	44	34	46	36	54	1.76	- 1.9	9	4,428	s.	30	s.	15	16	9	6	4.3	
La Crosse	714	11	48	29.25	30.02	+	.08	55.2	- 4.3	78	18	66	31	4	44	36				1.63	- 2.1	6	4,379	n.	23	w.	23	12	8	11	5.1	
Madison	974	70	78	28.96	30.01	+	.05	53.4	- 4.2	75	18	62	33	3	44	29	46	39	62	2.82	- 0.8	11	7,661	ne.	44	ne.	2	11	12	8	5.1	T.
Charles City	1,015	10	49	28.94	30.04	+	.10	53.9	- 5.6	76	18	66	28	4	42	38	47	40	63	2.67	- 2.3	9	5,644	nw.	28	nw.	17	10	6	15	6.0	
Davenport	606	71	79	29.35	30.02	+	.07	57.2	- 4.3	79	20	67	38	5	48	30	50	43	64	3.42	- 0.8	15	6,068	nw.	29	w.	29	13	8	10	4.7	
Des Moines	861	84	101	29.11	30.01	+	.08	56.7	- 4.9	78	10	67	36	13	46	32	48	41	60	3.26	- 1.3	12	6,485	nw.	27	w.	28	8	9	14	6.2	
Dubuque	698	100	115	29.29	30.04	+	.09	56.2	- 4.6	76	20	66	36	4	47	30	48	40	59	3.42	- 0.9	13	4,600	nw.	26	nw.	29	16	3	12	4.6	
Keokuk	614	64	78	29.35	30.02	+	.08	59.0	- 4.2	82	21	69	37	5	49	28	51	46	68	6.87	+ 2.6	15	5,810	nw.	28	sw.	17	16	8	7	3.5	
Cairo	356	87	93	29.64	30.02	+	.06	63.9	- 3.6	85	11	72	45	5	56	29	56	51	68	2.86	- 1.0	14	7,305	se.	37	sw.	23	6	8	17	6.7	
La Salle	536	56	64	29.46	30.03	+	.07	56.0	- 4.8	82	21	65	34	4	46	30				6.02	+ 2.1	15	6,322	ne.	31	sw.	17	11	8	12	5.4	
Peoria	609	11	45	29.36	30.02	+	.06	56.4	- 5.3	82	28	67	35	13	46	32	51	45	67	4.49	+ 0.2	15	5,876	ne.	36	w.	17	14	11	6	4.3	
Springfield, Ill.	644	10	91	29.32	30.00	+	.05	58.8	- 4.7	82	28	68	34	4	49	29	53	47	68	4.39	- 0.1	15	6,835	s.	28	nw.	31	14	5	12	5.3	
Hannibal	534	75	109	29.44	30.02	+	.08	58.4	- 6.0	82	28	68	39	13	49	27				6.58	+ 1.6	16	6,974	nw.	38	ne.	6	10	10	11	5.4	
St. Louis	567	208	317	29.40	30.00	+	.05	60.8	- 5.7	85	20	69	39	4	52	38	54	49	69	5.23	+ 1.0	15	8,213	se.	35	ne.	2	10	8	13	6.0	
Missouri Valley.																																
Columbia, Mo.	784	11	84	29.17	30.01	+	.07	59.2	- 5.3	85	10	69	37	13	50	31				6.82	+ 2.0	15	6,230	w.	34	sw.	1	12	8	11	5.0	
Kansas City	963	161	181	28.96	29.99	+	.07	59.8	- 4.7	82	10	68	42	3	52	24	53	48	69	10.92	+ 5.8	15	9,346	se.	50	se.	16	9	10	12	5.9	
Springfield, Mo.	1,324	98	104	28.60	30.00	+	.07	60.2	- 4.4	85	10	69	41	13	51	32	54	50	73	5.46	- 0.1	17	8,209	se.	42	n.	30	15	8	8	4.4	
Iola	954	11	50	28.94	29.98	+	.06	60.6	- 4.3	86	10	70	40	13	51	34				8.59	+ 3.5	18	5,557	n.	33	w.	20	13	5	13	5.6	
Topeka	953	85	101	28.94	29.98	+	.06	59.2	- 5.8	85	10	68	42	8	51	28				7.52	+ 2.6	16	7,024	n.	29	w.	20	11	10	10	5.1	
Lincoln	1,189	11	84	28.75	30.02	+	.11	57.2	- 5.7	82	10	68	32	3	47	35	49	43	67	3.61	- 0.6	12	8,040	n.	35	n.	2	9	9	13	5.6	
Omaha	1,105	115	121	28.85	30.03	+	.11	57.4	- 5.1	79	10	66	37	3	49	30	49	41	62	2.23	- 2.3	12	7,101	n.	36	ne.	2	9	10	12	5.6	
Valentine	2,598	47	54	27.33	30.05	+	.15	52.6	- 5.3	84	19	65	28	3	40	43	44	37														

TABLE I.—Climatological data for U. S. Weather Bureau stations, May, 1910—Continued.

Stations.	Elevation of instruments.			Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.													Precipitation, in inches.	Wind.											
	Barometer above sea level, feet.	Thermometers above ground.	Anemometer above ground.	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hrs.	Departure from normal.	Mean max. + mean min., + 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Total.	Departure from normal.	Days with rain or more.	Total movement, miles.	Prevailing direction.	Maximum velocity.			Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness during daylight, tenths.	Total snowfall.	
																								Miles per hour.	Direction.	Date.						
N. P. Coast Reg.—Con.																																
Port Crescent.....	259	8	53	29.86	30.15	+ .13	48.5	- 0.6	70	21	57	31	15	40	34				0.77	- 1.5	10	3,920	nw.	16	nw.	27	9	21	1	4.7		
Seattle.....	123	185	224	30.00	30.13	+ .12	57.0	+ 2.0	77	31	65	43	15	49	28	51	47	74	1.88	- 0.4	9	5,706	s.	33	sw.	11	11	10	10	5.2		
Tacoma.....	213	113	120	29.87	30.10	+ .08	56.6	+ 2.1	79	31	66	39	15	47	33	50	45	70	2.17	- 0.4	9	4,150	n.	20	sw.	27	11	12	8	5.1		
Tatoosh Island.....	86	7	57	30.02	30.12	+ .11	50.4	+ 0.8	61	31	54	42	1	46	16	48	46	86	2.34	- 1.8	9	8,576	a.	48	s.	24	7	10	14	6.2		
Portland, Oreg.....	153	68	106	29.94	30.10	+ .07	60.0	+ 3.2	86	31	70	44	15	50	35	52	46	65	1.82	- 0.5	9	4,239	nw.	23	sw.	26	12	8	11	4.7		
Roseburg.....	510	9	57	29.54	30.09	+ .06	60.1	+ 4.1	91	31	74	38	16	46	44	53	47	70	2.01	0.0	6	2,829	nw.	30	se.	9	16	12	3	3.1		
Mid. Pac. Coast Reg.							62.2	+ 2.6											67	0.22	- 0.9										4.0	
Eureka.....	62	62	80	30.05	30.12	+ .07	53.8	+ 1.7	74	16	59	43	29	48	28	50	46	81	0.64	- 1.9	7	5,893	n.	38	nw.	14	6	10	15	6.0		
Mount Tamalpais.....	2,375	11	18	27.58	30.04	+ .04	59.0		92	20	67	37	3	51	29	52	46	69	0.23	- 0.7	3	12,268	nw.	68	nw.	26	15	12	4	3.6		
Point Reyes Light.....	490	7	18	29.49	30.01		53.5		75	30	59	45	3	48	27				0.06		2	16,354	nw.	78	nw.	13	11	8	12	5.3		
Red Bluff.....	332	50	56	29.63	29.98	+ .03	70.0	+ 3.5	106	30	83	43	3	57	36	58	49	54	0.74	- 0.6	3	4,504	se.	38	nw.	15	22	5	4	2.6		
Sacramento.....	69	106	117	29.90	29.97	+ .03	66.0	+ 3.1	103	30	79	44	4	53	41	55	47	58	0.03	- 1.0	1	6,854	s.	32	nw.	15	26	4	1	1.6		
San Francisco.....	155	200	204	29.88	30.04	+ .05	58.7	+ 3.2	90	30	66	48	4	52	35	52	48	75	0.03	- 0.8	2	6,769	w.	36	w.	31	13	9	6	4.1		
San Jose.....	141	12	110	29.87	30.02		62.3	+ 1.6	102	30	76	39	1	49	48				T.	- 0.7	0	3,009	nw.	19	nw.	27	21	9	1	3.0		
Southeast Farallon.....	30	9	17	30.03	30.06		53.2		63	16	56	45	17	51	18				0.09	- 0.7	4	10,979	nw.	58	nw.	13	11	10	10	5.4		
S. Pac. Coast Reg.							53.9	+ 2.3											62	0.01	- 0.6										3.4	
Fresno.....	330	67	70	29.60	29.95	+ .03	71.0	+ 2.6	110	31	88	41	5	54	42	55	43	45	T.	- 0.6	0	5,340	w.	25	w.	3	22	7	2	2.4		
Los Angeles.....	338	159	191	29.61	29.98	+ .03	63.0	+ 2.5	83	28	72	49	5	53	27	55	51	74	0.00	- 0.5	0	4,291	sw.	22	sw.	2	17	12	2	3.8		
San Diego.....	87	94	102	29.89	29.98	+ .03	61.1	+ 0.3	75	9	66	46	5	56	20	56	53	80	0.05	- 0.4	2	4,635	w.	20	nw.	31	16	15	0	3.4		
San Luis Obispo.....	201	47	54	29.82	30.04	+ .04	60.5	+ 3.8	97	28	73	37	5	48	39	52	47	71	T.	- 0.9	0	4,820	nw.	24	w.	1	13	12	6	4.2		
West Indies.																																
Grand Turk.....	11	6	20																													
San Juan.....	82	48	90	29.94	30.02	+ .03	77.4		88	31	82	70	3	72	15	71	69	74	4.62	0.0	16	8,705	e.	33	se.	13	9	16	6	5.1		
Panama.																																
Christobal.....	17	5	60	29.86	29.88		79.0		87	24	83	71	29	75	14	76	75	88	12.09	- 0.2	24	6,507	n.	24	ne.	3	3	12	16	6.8		
Culebra.....	172	4	30	29.46	29.87		78.6		90	29	86	68	29	72	22	74	73	93	10.50	- 0.6	18	4,326	nw.	24	n.	13	1	10	20	8.1		
Ancon.....	92	6	69	29.77	29.86		79.2		92	9	86	69	29	72	20	75	74	90	9.89	+ 1.2	23	4,718	nw.	28	se.	27	0	9	22	8.2		
Alhajuela.....																			11.50	+ 0.8	24											
Bobio.....																			14.14	+ 0.2	28											
Gatun.....																			15.68	+ 0.3	25											

† Below sea level.

TABLE II.—Accumulated amounts of precipitation for each 5 minutes, for storms in which the rate of fall equaled or exceeded 0.25 in any 5 minutes, or 0.80 inch in 1 hour, during May, 1910, at all stations furnished with self-registering gages.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive began.	Depths of precipitation (in inches) during periods of time indicated.													
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Abilene, Tex.	30	3:25 a.m.	7:10 a.m.	0.99	5:09 a.m.	5:17 a.m.	0.59	0.22	0.30												
Albany, N. Y.	30	12:40 p.m.	5:00 p.m.	1.15	1:00 p.m.	1:20 p.m.	0.01	0.10	0.26	0.46	0.52										
Alpena, Mich.	17			0.48														0.38			
Amarillo, Tex.	14-15	8:00 p.m.	9:43 a.m.	0.78	2:35 a.m.	3:15 a.m.	0.17	0.17	0.27	0.45	0.50	0.60	0.71	0.72	0.73						
Annisston, Ala.	8	D. N.	6:50 a.m.	0.70	3:38 a.m.	4:05 a.m.	0.11	0.18	0.19	0.30	0.40	0.48	0.54								
Do.	20	1:34 p.m.	7:20 p.m.	1.19	2:04 p.m.	2:54 p.m.	0.13	0.08	0.14	0.17	0.21	0.27	0.38	0.43	0.51	0.69	0.79				
Asheville, N. C.	3			0.37														0.37			
Atlanta, Ga.	7	2:35 p.m.	4:45 p.m.	0.69	3:51 p.m.	4:16 p.m.	0.01	0.07	0.14	0.37	0.59	0.65									
Do.	24	D. N.	8:45 a.m.	1.73	5:38 a.m.	5:53 a.m.	0.21	0.23	0.48	0.60											
Atlantic City, N. J.	8			0.38														0.19			
Augusta, Ga.	8			0.38														0.34			
Baltimore, Md.	3	5:18 p.m.	7:00 p.m.	0.62	5:23 p.m.	5:43 p.m.	T.	0.21	0.34	0.40	0.43										
Bentonville, Ark.	16	12:50 p.m.	3:45 p.m.	1.73	1:02 p.m.	2:10 p.m.	0.01	0.10	0.32	0.54	0.70	0.83	0.92	1.04	1.08	1.24	1.27	1.46	1.64		
Do.	31-1	11:50 p.m.	12:10 a.m.	0.30	11:52 p.m.	11:57 p.m.	0.01	0.27													
Binghamton, N. Y.	25	11:00 a.m.	1:30 p.m.	1.25	11:10 a.m.	12:31 p.m.	T.	0.07	0.08	0.09	0.12	0.20	0.22	0.25	0.26	0.29	0.35	0.80	1.00	1.21	
Birmingham, Ala.	19	11:41 a.m.	2:25 p.m.	0.86	1:07 p.m.	1:42 p.m.	0.01	0.25	0.43	0.56	0.62	0.66	0.74	0.79							
Do.	20	9:18 a.m.	10:41 a.m.	0.74	9:39 a.m.	10:19 a.m.	0.01	0.05	0.09	0.11	0.16	0.27	0.48	0.62	0.68						
Bismarck, N. Dak.	14			0.19														0.17			
Block Island, R. I.	21			0.86														0.52			
Boise, Idaho.	27			0.18														0.12			
Boston, Mass.	31			0.57														0.12			
Buffalo, N. Y.	2			0.99														0.37			
Burlington, Vt.	24			0.27														0.20			
Cairo, Ill.	24	D. N.	6:55 a.m.	1.69	5:12 a.m.	5:00 a.m.	0.06	0.08	0.14	0.24	0.36	0.45	0.56	0.65							
Canton, N. Y.	23			0.32	5:32 a.m.	6:18 a.m.	0.76	0.12	0.25	0.37	0.40	0.44	0.53	0.62	0.71	0.81	0.84				
Charles City, Iowa.	21			0.65														0.29			
Charleston, S. C.	4	9:48 p.m.	11:00 p.m.	0.43	9:56 p.m.	10:06 p.m.	0.01	0.11	0.36									0.42			
Charlotte, N. C.	7			0.98														0.64			
Chattanooga, Tenn.	12	7:20 a.m.	9:51 a.m.	0.36	7:39 a.m.	7:49 a.m.	0.03	0.27	0.36												
Do.	21	4:29 p.m.	5:41 p.m.	0.54	4:36 p.m.	4:51 p.m.	0.04	0.12	0.42	0.48											
Cheyenne, Wyo.	25			0.28																	
Chicago, Ill.	23			1.13														0.25			
Cincinnati, Ohio.	2			0.														0.51			
Cleveland, Ohio.	1	5:05 p.m.	8:17 p.m.	0.84	5:42 p.m.	5:52 p.m.	0.18	0.25	0.35									0.40			
Columbia, Mo.	1	D. N.	6:59 a.m.	1.08	5:45 a.m.	6:35 a.m.	0.27	0.21	0.23	0.26	0.49	0.62	0.67	0.68	0.69	0.70	0.72				
Columbia, S. C.	4			0.54														0.35			
Columbus, Ohio.	3			0.72														0.27			
Concord, N. H.	3			0.44														0.39			
Concordia, Kans.	20-21	6:10 p.m.	5:00 a.m.	1.34	6:48 p.m.	7:04 p.m.	0.26	0.07	0.30	0.39											
Do.	28	5:21 p.m.	6:23 p.m.	0.73	5:58 p.m.	6:19 p.m.	0.05	0.14	0.31	0.61	0.67										
Corpus Christi, Tex.	20	7:14 p.m.	9:16 p.m.	0.64	7:52 p.m.	8:12 p.m.	0.04	0.12	0.42	0.51	0.57										
Do.	29	5:59 a.m.	9:03 a.m.	1.45	6:50 a.m.	7:25 a.m.	0.02	0.05	0.13	0.23	0.41	0.57	0.69	0.79							
Davenport, Iowa.	21	5:10 p.m.	6:05 p.m.	0.51	5:37 p.m.	5:47 p.m.	0.05	0.17	0.44												
Del Rio, Tex.	5			0.11														0.10			
Denver, Colo.	14			0.24														0.20			
Des Moines, Iowa.	21			0.49														0.44			
Detroit, Mich.	21-22	D. N.	D. N.	0.70	12:35 a.m.	12:50 a.m.	0.08	0.29	0.49	0.57											
Devils Lake, N. Dak.	19			0.33														0.18			
Dodge City, Kans.	16			0.26														0.22			
Dubuque, Iowa.	21	7:18 p.m.	10:05 p.m.	0.58	8:48 p.m.	9:05 p.m.	0.01	0.07	0.22	0.40	0.42										

TABLE II.—Accumulated amounts of precipitation for each 5 minutes, etc.—Continued.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive began.	Depths of precipitation (in inches) during periods of time indicated.															
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.		
Duluth, Minn.	18			0.17														0.16					
Durango, Colo.	14			0.04														*					
Eastport, Me.	24			0.34														0.13					
Elkins, W. Va.	24			0.75														0.30					
El Paso, Tex.	1			0.45														0.21					
Erie, Pa.	1			0.30														0.22					
Escondido, Mich.	29			0.27														0.12					
Eureka, Cal.	26			0.65														0.03					
Evansville, Ind.	2-3	10:05 p.m.	1:00 a.m.	0.03	10:26 p.m.	10:51 p.m.	0.04	0.09	0.13	0.23	0.41	0.53						0.03					
Flagstaff, Ariz.	17			0.46														0.46					
Fort Smith, Ark.	20			0.60																			
Fort Worth, Tex.	21-22	5:55 p.m.	12:15 a.m.	0.60	6:05 p.m.	6:20 p.m.	0.01	0.18	0.28	0.35													
Fresno, Cal.	1			1.97	8:59 p.m.	9:50 p.m.	0.17	0.30	0.46	0.50	0.72	0.86	0.93	1.03	1.13	1.22	1.32						
Galveston, Tex.	20-21	6:35 p.m.	1:10 a.m.	1.74	10:32 p.m.	11:27 p.m.	0.09	0.13	0.24	0.47	0.75	0.86	0.95	0.99	1.05	1.11	1.19	1.24					
Do.	21-22	9:16 p.m.	1:45 a.m.	0.87	7:21 p.m.	7:58 p.m.	0.04	0.27	0.38	0.45													
Grand Haven, Mich.	21	6:35 p.m.	9:15 p.m.	0.24														*					
Grand Junction, Colo.	1			0.34														0.33					
Grand Rapids, Mich.	21			1.07														0.25					
Green Bay, Wis.	28			0.90														0.62					
Hannibal, Mo.	29			0.49	6:13 p.m.	6:59 p.m.	0.07	0.17	0.39	0.67	0.79	0.97	1.16	1.44	1.65	1.75							
Harrisburg, Pa.	24	5:28 p.m.	9:12 p.m.	0.65														0.22					
Hartford, Conn.	9			0.24	6:06 p.m.	6:22 p.m.	0.16	0.19	0.34	0.44	0.49												
Hatteras, N. C.	30	3:45 p.m.	6:40 p.m.	0.19														0.14					
Havre, Mont.	14			1.85														*					
Helena, Mont.	4			0.16														0.63					
Houghton, Mich.	17			1.29														0.09					
Huron, S. Dak.	15			0.78																			
Independence, Cal.	1			1.29	2:52 a.m.	4:00 a.m.	0.01	0.26	0.33	0.35	0.36	0.36	0.37	0.47	0.60	0.88	0.94	1.01	1.17				
Indianapolis, Ind.	21	D. N.	5:55 a.m.	0.78	1:05 a.m.	1:18 a.m.	0.23	0.23	0.46	0.53													
Iola, Kans.	30-1	11:22 p.m.	1:35 a.m.	1.26	4:30 p.m.	4:55 p.m.	0.23	0.06	0.13	0.22	0.37	0.52											
Do.	6	2:55 p.m.	8:10 p.m.	0.53	2:43 p.m.	2:55 p.m.	0.01	0.22	0.40	0.51													
Do.	30	2:05 p.m.	3:15 p.m.	0.56	11:58 a.m.	12:11 p.m.	0.01	0.18	0.32	0.47													
Jacksonville, Fla.	24	11:46 a.m.	2:15 p.m.	1.32	3:34 p.m.	3:52 p.m.	0.01	0.06	0.26	0.36	0.41												
Do.	31	10:45 a.m.	11:40 a.m.	0.50	10:54 a.m.	11:04 a.m.	0.01	0.26	0.58														
Jupiter, Fla.	11	3:30 p.m.	6:20 p.m.	1.12	4:49 p.m.	5:19 p.m.	0.90	0.13	0.25	0.36	0.48												
Do.	25	12:53 p.m.	4:40 p.m.	1.12	1:08 p.m.	1:33 p.m.	0.02	0.11	0.26	0.45	0.64	0.90	1.02										
Kalispell, Mont.	27			0.17														0.14					
Kansas City, Mo.	1-2	8:45 p.m.	6:10 a.m.	2.94	12:01 a.m.	1:40 a.m.	0.39	0.14	0.34	0.36	0.41	0.53	0.71	0.94	1.04	1.05	1.05	1.06	1.24	1.81			
Do.	28	8:55 p.m.	D. N.	0.90	11:23 p.m.	11:44 p.m.	0.07	0.15	0.32	0.68	0.78	0.83											
Do.	1-2	9:40 p.m.	5:15 a.m.	2.88	11:10 p.m.	1:10 a.m.	0.45	0.17	0.34	0.48	0.49	0.50	0.50	0.51	0.52	0.62	0.64	1.20	1.29	1.82	1.97		
Keokuk, Iowa	9			0.45														0.16					
Key West, Fla.	29-30	6:00 p.m.	D. N.	1.06	7:17 p.m.	7:23 p.m.	0.05	0.27	0.35									0.23					
Knoxville, Tenn.	21			0.55																			
La Crosse, Wis.	25	1:07 p.m.	1:30 p.m.	0.08	1:49 p.m.	1:20 p.m.	T.	0.07		0.29	0.62	0.90	1.17	1.31	1.37								
Lander, Wyo.	21	4:05 p.m.	7:07 p.m.	1.54	5:20 p.m.	5:55 p.m.	0.06	0.07															
La Salle, Ill.	10			0.58														0.15					
Lewiston, Idaho	7	4:45 p.m.	6:55 p.m.	1.12	5:12 p.m.	5:24 p.m.	0.03	0.29	0.57	0.66													
Lexington, Ky.	28	4:49 p.m.	6:22 p.m.	0.52	5:26 p.m.	5:36 p.m.	0.10	0.07	0.34														
Lincoln, Nebr.	28	D. N.	9:35 a.m.	0.86	4:40 a.m.	4:54 a.m.	0.40	0.20	0.32	0.38	0.41	0.55	0.69	0.75	0.80	0.87							
Little Rock, Ark.	16	D. N.	10:25 a.m.	2.43	1:45 a.m.	2:30 a.m.	0.40	0.20	0.32	0.38	0.41	0.55	0.69	0.75	0.80	0.87							
Do.	30	3:20 p.m.	4:20 p.m.	0.85	3:35 p.m.	3:45 p.m.	0.01	0.19	0.47	0.76													
Los Angeles, Cal.	7			1.51														0.50					
Louisville, Ky.	24	2:46 p.m.	5:00 p.m.	0.79	3:05 p.m.	3:18 p.m.	0.01	0.32	0.56	0.62													
Lynchburg, Va.	12	4:06 p.m.	5:05 p.m.	0.33	4:18 p.m.	4:23 p.m.	0.03	0.27															
Macon, Ga.	28			0.38														0.26					
Marquette, Mich.	17			0.86														0.31					
Memphis, Tenn.	16			1.24														0.46					
Meridian, Miss.	20	6:38 a.m.	6:30 p.m.	2.53	8:10 a.m.	8:33 a.m.	0.11	0.11	0.45	0.75	1.11	1.20											
Milwaukee, Wis.	20			0.33														0.28					
Minneapolis, Minn.	17			0.90														0.18					
Mobile, Ala.	18	9:00 a.m.	12:40 p.m.	0.71	10:10 a.m.	10:40 a.m.	0.07	0.06	0.16	0.35	0.44	0.49	0.55										
Modena, Utah	1			0.12														0.10					
Montgomery, Ala.	20			1.08														0.34					
Moorhead, Minn.	23			0.07														0.04					
Mount Tamalpais, Cal.	10			0.15														0.05					
Mount Weather, Va.	3			0.53														0.49					
Nantucket, Mass.	26			0.93														0.34					
Nashville, Tenn.	17	4:00 p.m.	6:35 p.m.	1.03	5:46 p.m.	6:16 p.m.	0.34	0.11	0.18	0.27	0.38	0.52	0.68										
Do.	24	3:00 p.m.	4:10 p.m.	0.61	3:03 p.m.	3:33 p.m.	0.01	0.23	0.33	0.34	0.37	0.48	0.57										
New Haven, Conn.	20-21	11:50 p.m.	6:30 a.m.	1.14	3:23 a.m.	4:08 a.m.	0.29	0															

TABLE II.—Accumulated amounts of precipitation for each 5 minutes, etc.—Continued.

Stations.	Date.	Total duration.		Total amount of precipita- tion.	Excessive rate.		Amount before excessive be- gan.	Depths of precipitation (in inches) during periods of time indicated.													
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Roseburg, Oreg.	9	6:24 p. m.	6:45 p. m.	1.14	6:24 p. m.	6:45 p. m.	0.04	0.55	0.80	1.10†	1.14†										
Roswell, N. Mex.	30			0.08														0.08			
Sacramento, Cal.	9			0.03														0.03			
St. Louis, Mo.	22-23			2.30														0.53			
St. Paul, Minn.	17			1.09														0.31			
Salt Lake City, Utah.	25			0.12														0.07			
San Antonio, Tex.	20	1:35 p. m.	5:10 p. m.	0.81	2:18 p. m.	2:48 p. m.	0.02	0.80	0.31	0.46	0.60	0.69	0.73								
San Diego, Cal.	1			0.03														0.02			
Sandusky, Ohio.	17			0.28														0.18			
San Francisco, Cal.	10			0.02														0.02			
San Jose, Cal.	†																				
San Louis Obispo, Cal.	†																				
Santa Fe, N. Mex.	17-18			0.21														*			
Sault Ste. Marie, Mich.	29			0.41														0.16			
Savannah, Ga.	24	2:05 p. m.	5:05 p. m.	0.44	2:16 p. m.	2:31 p. m.	0.02	0.20	0.28	0.35											
Seranton, Pa.	25			0.37														0.32			
Seattle, Wash.	9			0.78														0.19			
Sheridan, Wyo.	14			0.17														0.13			
Shreveport, La.	19	6:40 a. m.	10:20 a. m.	1.36	6:49 a. m.	7:09 a. m.	0.02	0.13	0.28	0.41	0.52										
Do.	22-23	10:45 p. m.	12:20 a. m.	1.62	11:50 p. m.	11:33 p. m.	0.08	0.09	0.35	0.63	0.96	1.30	1.39								
Sioux City, Iowa.	5-6			0.84														*			
Southeast Farallon, Cal.	9			0.04														0.04			
Spokane, Wash.	25			0.17														0.11			
Springfield, Ill.	29			0.74														0.61			
Springfield, Mo.	30	1:35 p. m.	2:22 p. m.	0.35	1:39 p. m.	1:49 p. m.	T.	0.09	0.30												
Syracuse, N. Y.	20-21	4:45 p. m.	D. N.	1.38	12:03 a. m.	12:43 a. m.	0.45	0.05	0.22	0.44	0.54	0.63	0.70	0.78	0.84						
Tacoma, Wash.	10			0.39														0.20			
Tampa, Fla.	25	D. N.	7:15 a. m.	0.99	6:10 a. m.	6:44 a. m.	0.28	0.08	0.24	0.29	0.35	0.45	0.58	0.67							
Tatoosh Island, Wash.	25			0.24														0.17			
Taylor, Tex.	19	9:05 a. m.	11:00 a. m.	0.74	9:35 a. m.	9:45 a. m.	0.15	0.25	0.43												
Do.	22	7:07 p. m.	7:40 p. m.	0.55	7:09 p. m.	7:29 p. m.	T.	0.09	0.20	0.45	0.54										
Thomasville, Ga.	24			0.87														0.46			
Toledo, Ohio.	2	12:52 p. m.	3:10 p. m.	0.67	1:32 p. m.	1:46 p. m.	0.04	0.19	0.42	0.60											
Tonopah, Nev.	4			0.18														*			
Topeka, Kans.	20	9:35 p. m.	11:35 p. m.	1.03	9:45 p. m.	10:03 p. m.	0.02	0.22	0.39	0.66	0.78										
Valentine, Nebr.	26			0.31														0.22			
Vicksburg, Miss.	20			1.21														0.49			
Walla Walla, Wash.	27			0.34														0.18			
Washington, D. C.	24			0.43														0.38			
Wichita, Kans.	1-2	11:00 p. m.	12:20 a. m.	2.58	11:08 p. m.	11:59 p. m.	0.06	0.08	0.23	0.49	0.72	0.93	1.22	1.60	1.92	2.30	2.48	2.50			
Do.	2	1:00 a. m.	D. N.	0.42	1:21 a. m.	1:36 a. m.	0.01	0.12	0.28	0.40											
Do.	15-16	4:40 p. m.	6:35 a. m.	0.67	5:38 a. m.	6:00 a. m.	0.03	0.12	0.29	0.47	0.58	0.63									
Williston, N. Dak.	14			0.36														0.11			
Wilmington, N. C.	8-9	10:02 p. m.	D. N.	2.38	10:04 p. m.	10:56 p. m.	0.01	0.16	0.31	0.48	0.55	0.62	0.67	0.81	1.02	1.11	1.26				
Winnemucca, Nev.	3			0.26														0.05			
Wytheville, Va.	18			0.42														0.30			
Yankton, S. Dak.	10			0.43														0.29			
Yellowstone Park, Wyo.	14-15			0.56														*			

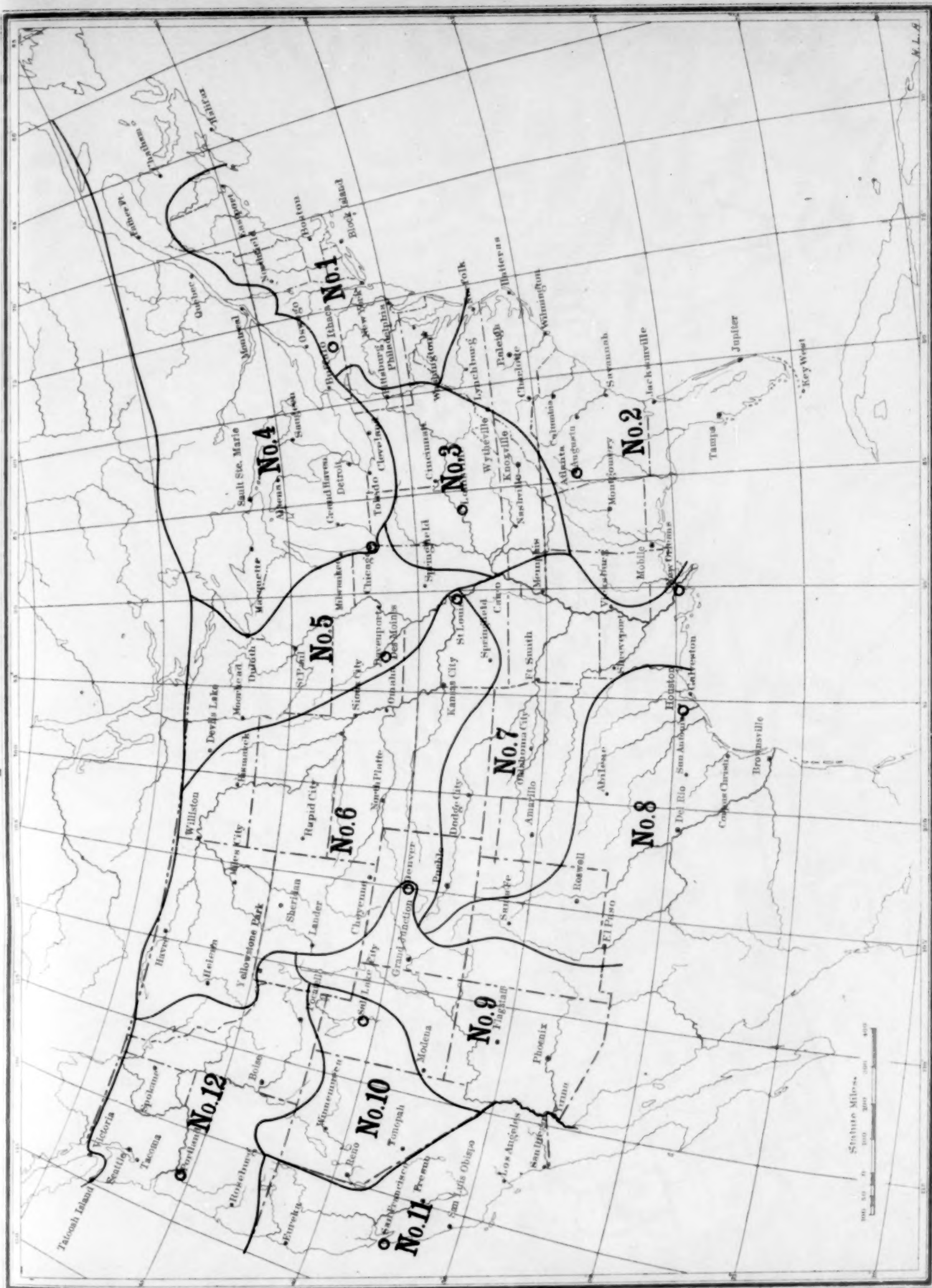
† No date on which a measurable amount occurred.

TABLE III.—Data furnished by the Canadian Meteorological Service, May, 1910.

Stations.	Pressure.			Temperature.				Precipitation.			Stations.	Pressure.			Temperature.				Precipitation.		
	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean.	Departure from normal.	Mean maximum.	Mean minimum.	Total.	Departure from normal.	Total snowfall.		Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean.	Departure from normal.	Mean maximum.	Mean minimum.	Total.	Departure from normal.	Total snowfall.
St. John's, N. F.	29.84	29.98	-.00	47.4	+4.5	55.2	39.7	2.23	-1.43		Parry Sound, Ont.	29.27	29.97	+.02	50.3	-0.8	61.5	39.2	3.38	+0.45	
Sydney, C. B. I.	29.90	29.94	-.03	48.2	+3.0	56.9	39.3	3.08	-0.69		Port Arthur, Ont.	29.29	29.97	+.04	45.0	-0.9	55.7	34.2	0.76	-1.39	
Halifax, N. S.	29.86	29.97	-.01	49.9	+1.5	58.5	41.3	3.32	-0.94		Winnipeg, Man.	29.21	30.05	+.09	48.9	-2.7	62.5	35.4	1.65	-0.63	2.3
Grand Manan, N. B.	29.89	29.94	-.03	49.6	+1.7	56.9	42.4	1.45	-2.16	T.	Minnedosa, Man.	29.20	30.03	+.07	46.6	-1.8	61.8	31.4	1.07	-0.35	0.9
Yarmouth, N. S.	29.89	29.96	-.02	49.7	+2.1	57.6	41.8	1.56	-2.24		Qu'Appelle, Assin.	27.74	29.99	+.05	45.8	-4.0	58.0	33.7	3.38	+1.73	1.1
Charlottetown, P. E. I.	29.91	29.95	-.01	49.5	+2.6	57.3	41.8	2.38	-0.53	T.	Medicine Hat, Alberta.	27.71	29.98	+.09	57.3	+3.2	70.7	44.0	0.49	-0.82	
Chatham, N. B.	29.93	29.95	.00	50.1	+1.6	59.8	40.3	4.37	+1.16	7.4	Swift Current, Sask.	27.44	30.00	+.08	51.0	+0.3	64.0	38.0	0.80	-0.96	
Father Point, Que.	29.90	29.92	-.01	47.3	+3.3	56.5	38.1	2.91	+0.33		Calgary, Alberta.	26.45	29.98	+.10	50.4	+1.4	64.4	36.3	1.08	-0.69	3.8
Quebec, Que.	29.59	29.91	-.03	51.8	+1.9	61.3	42.2	4.01	+0.93		Banff, Alberta.	25.41	29.99	+.11	46.9	+0.1	60.4	33.4	0.63	-1.41	3.3
Montreal, Que.	29.70	29.91	-.03	54.6	-0.1	62.4	46.8	3.72	+0.77		Edmonton, Alberta.	27.70	29.99	+.11	51.3	+0.5	66.5	36.2	1.20	-0.35	
Stoncliffe, Ont.*	29.67	29.99	+.05	53.5	-1.1	62.6	45.0	1.80	-0.79		Prince Albert, Sask.	28.42	29.98	+.03	47.8	+0.2	61.9	33.6	0.69	-0.57	
Ottawa, Ont.	29.65	29.96	.00	53.6	+0.7	58.6	48.5	3.09	+0.41		Battleford, Sask.	28.26	30.00	+.08	50.8	+0.2	64.3	37.2	2.35	-0.73	
Kingston, Ont.	29.65	29.96	.00	53.6	+0.7	58.6	48.5	3.09	+0.41		Kamloops, B. C.	28.69	29.95	+.06	61.9	+2.8	76.5	47.2	0.62	-0.62	
Toronto, Ont.	29.59	29.97	-.01	52.5	-0.7	61.2	43.7	2.73	-0.31		Victoria, B. C.	30.00	30.10	+0.10	54.8	+2.3	64.4	45.2	0.77	-0.71	
White River, Ont.	29.65	29.98	+.03	43.2	-2.5	54.8	31.6	2.56	+0.61	T.	Barkerville, B. C.	25.74	30.06	+.22	43.8	-1.7	55.0	32.6	2.53	+0.01	3.8
Port Stanley, Ont.	29.35	29.99	+.02	50.4	-2.7	58.9	41.8	4.48	+1.30		Dawson, Yukon.										
Southampton, Ont.	29.30			48.6	-2.1	57.7	39.4	2.85	+0.41	0.3	Hamilton, Bermuda.	29.99	30.15	+.09	67.3	-2.1	72.0	62.5	5.32	+0.66	

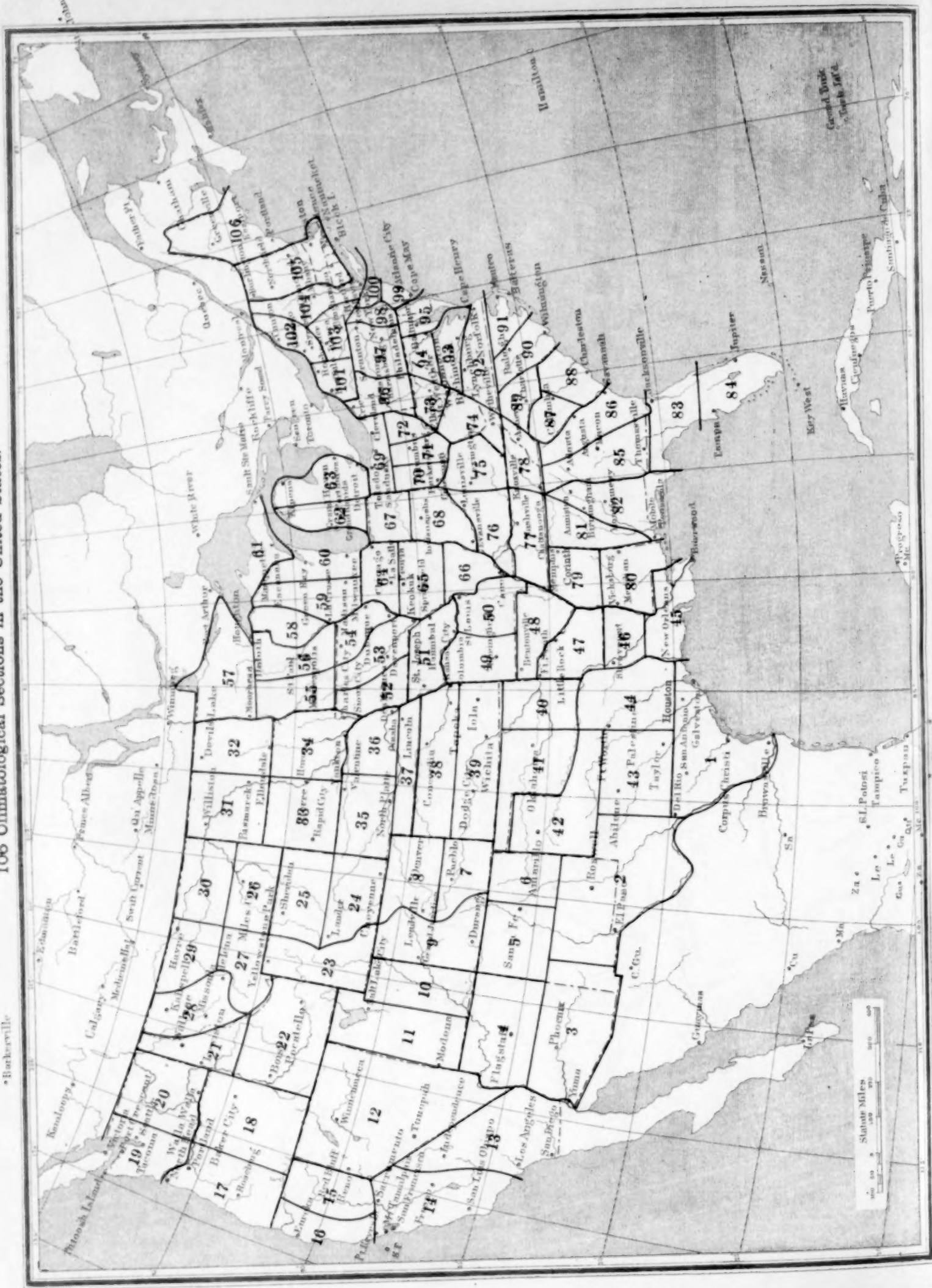
* Name changed from Rockcliffe.

Climatological Districts of the United States.



106 Climatological Sections in the United States.

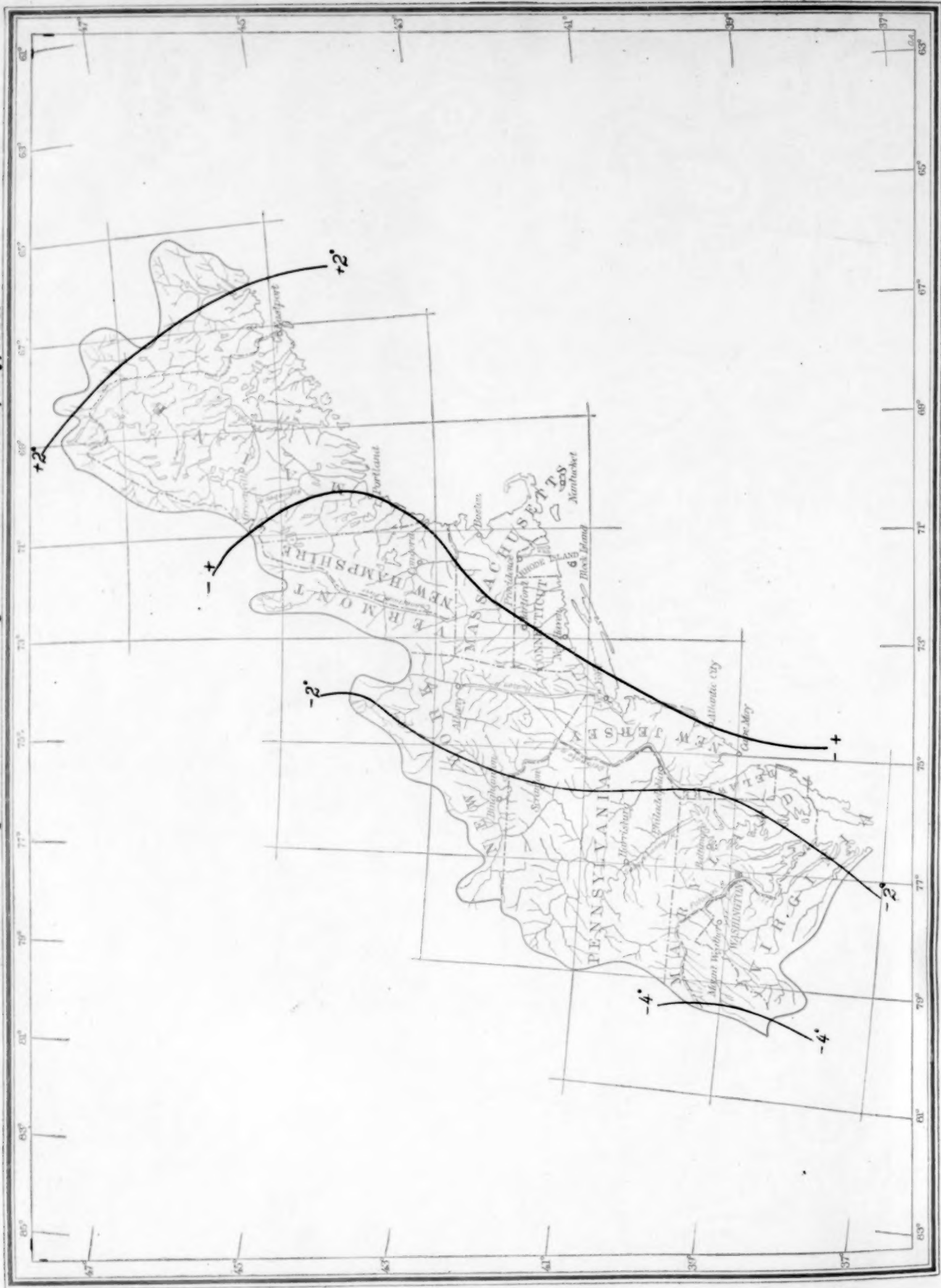
Barkerville



District No. 1.—Total Precipitation, May, 1910.



District No. 1.—Departure of the Mean Temperature from the Normal, May, 1910.

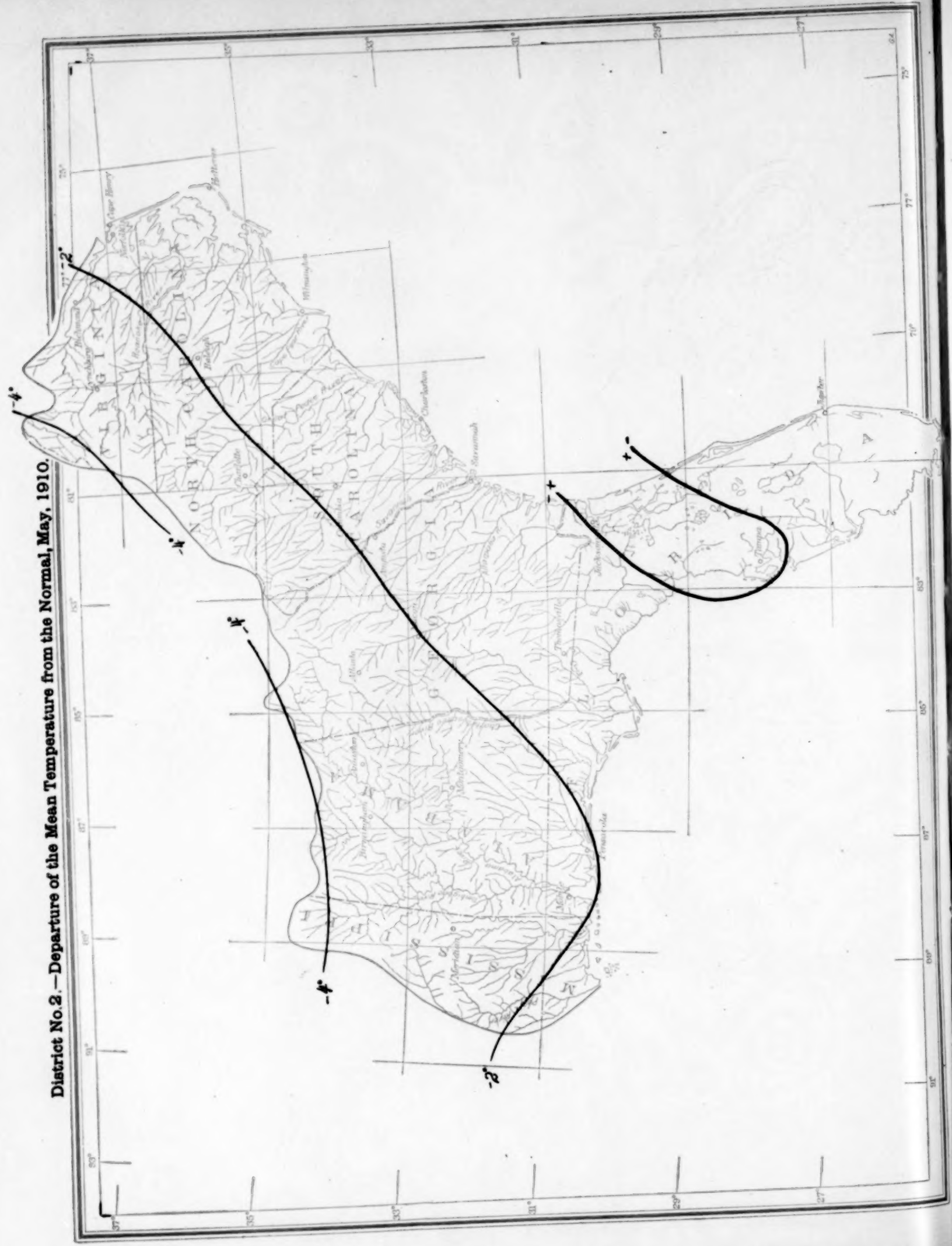


District No. 2.—Total Precipitation, May, 1910.

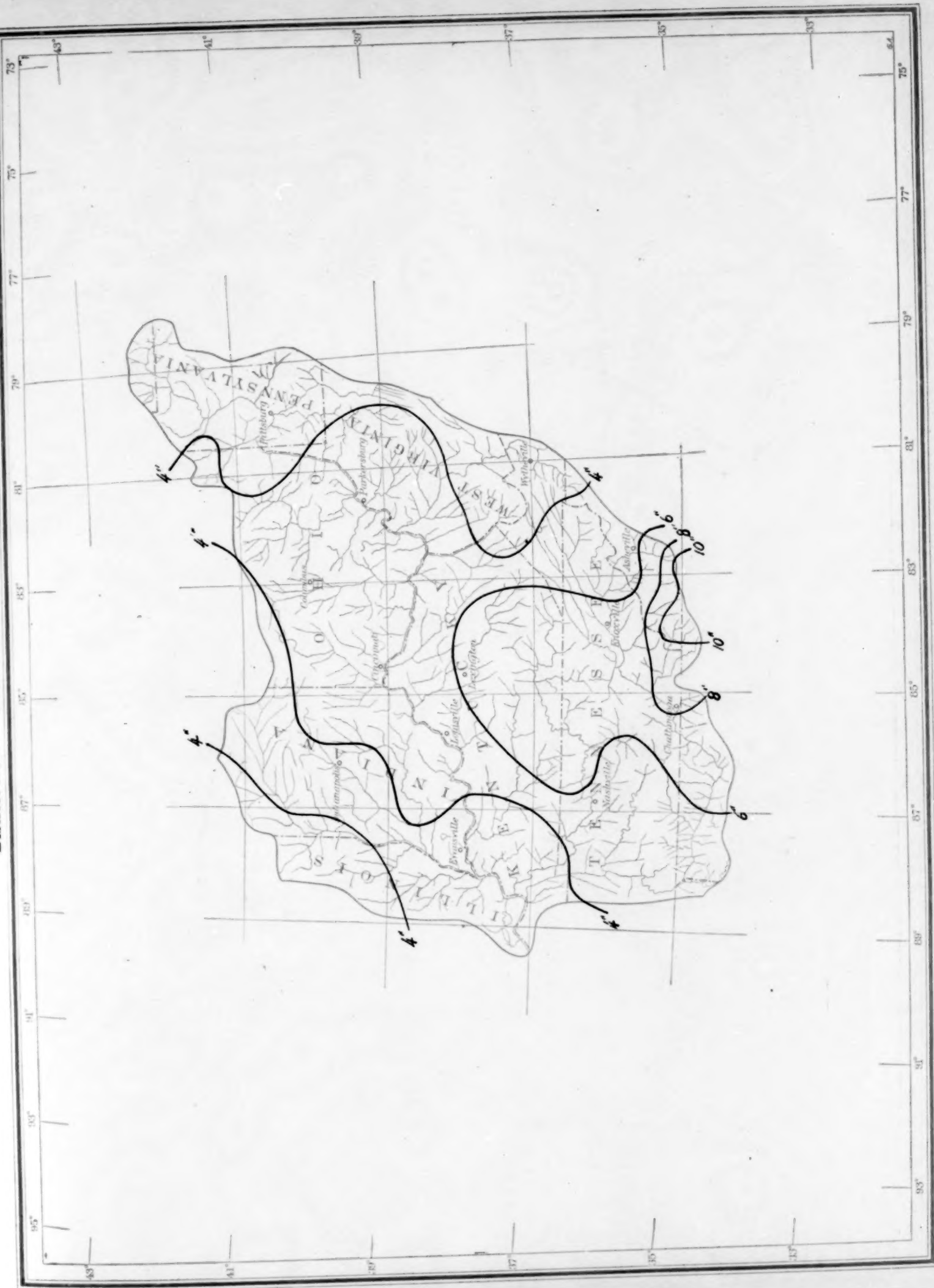
District No. 2.—Total Precipitation, May, 1910.



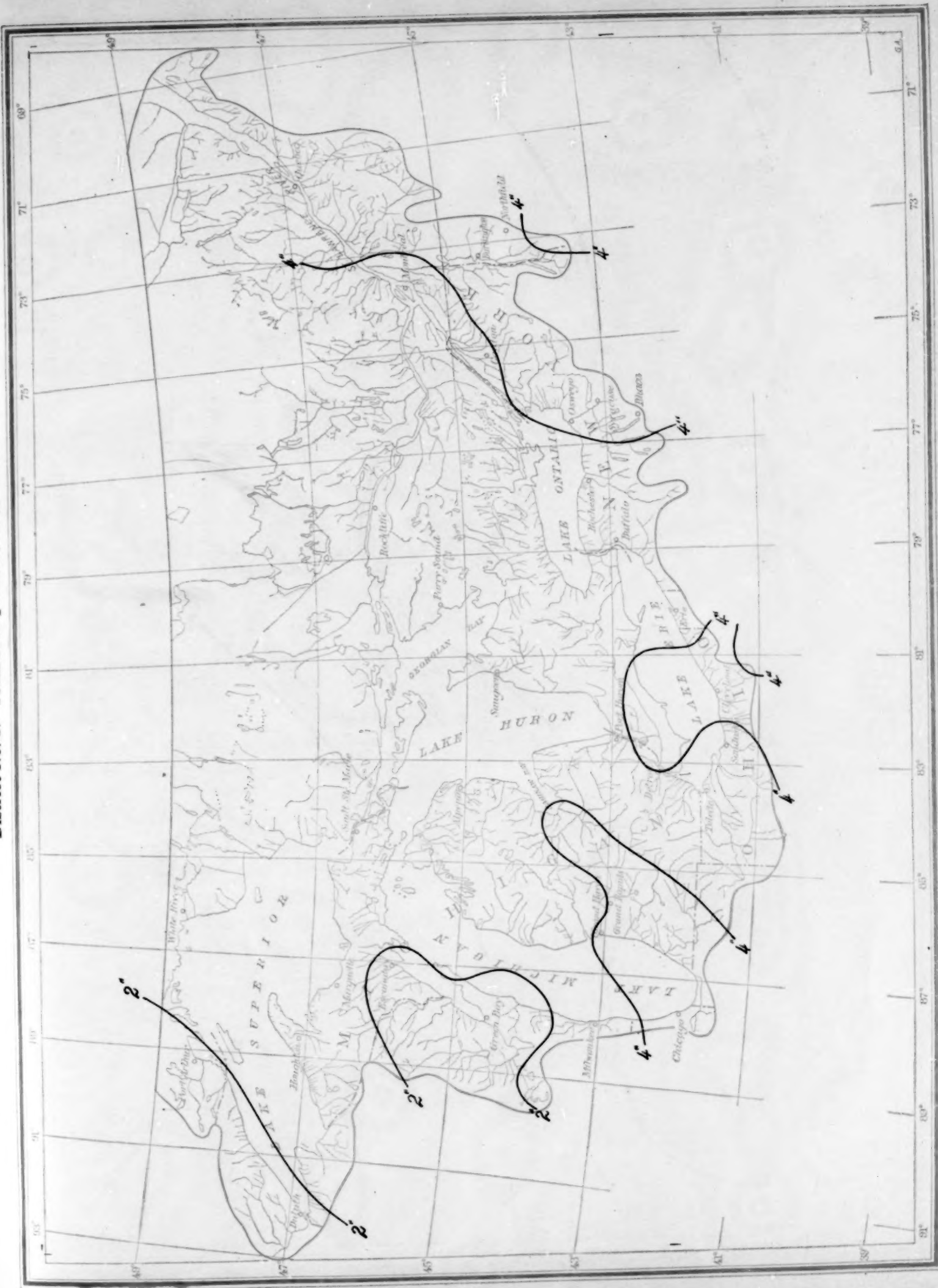
District No. 2. — Departure of the Mean Temperature from the Normal, May, 1910.



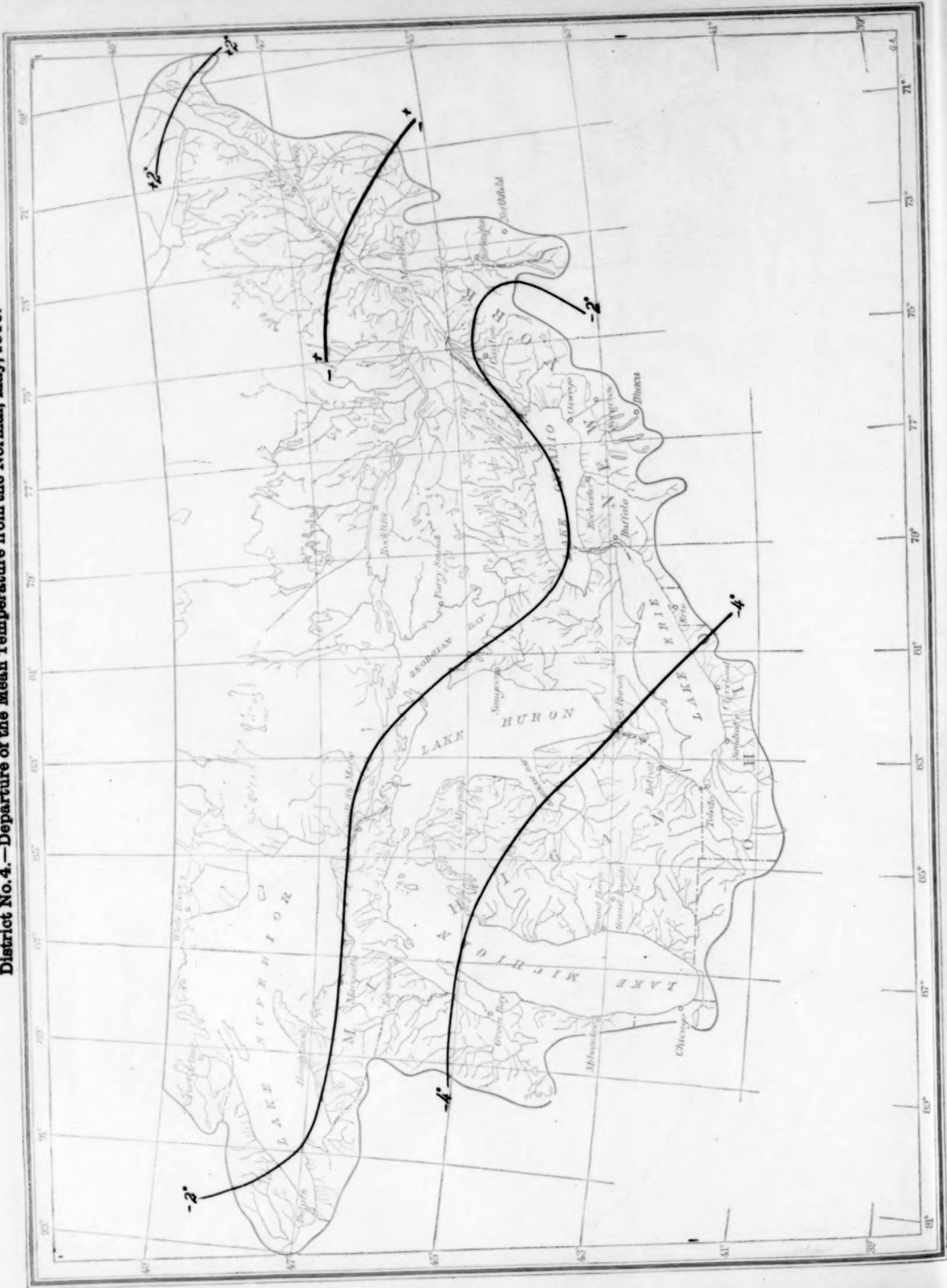
District No. 3.—Total Precipitation, May, 1910.



District No. 4.—Total Precipitation, May, 1910.



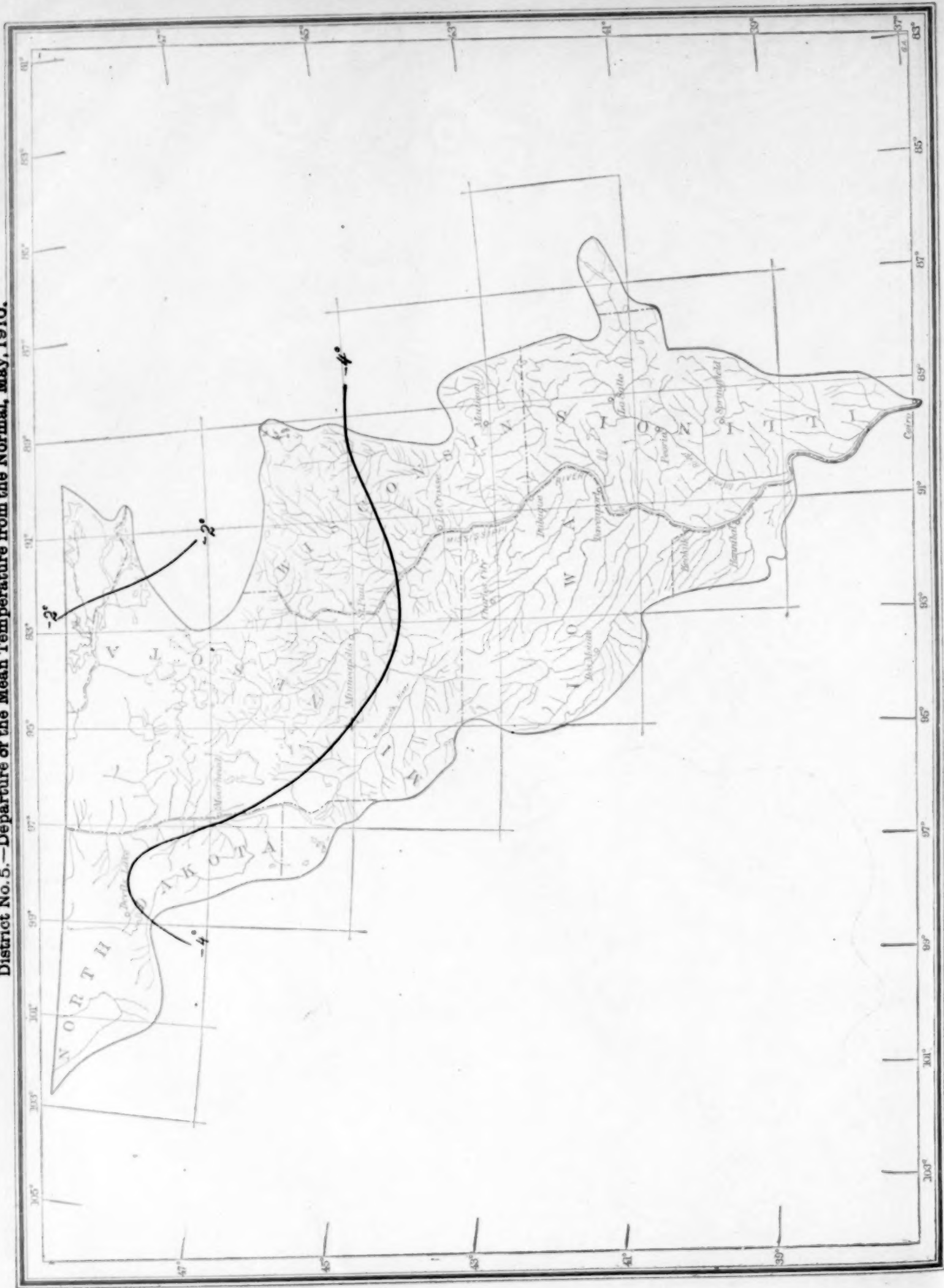
District No. 4.—Departure of the Mean Temperature from the Normal, May, 1910.



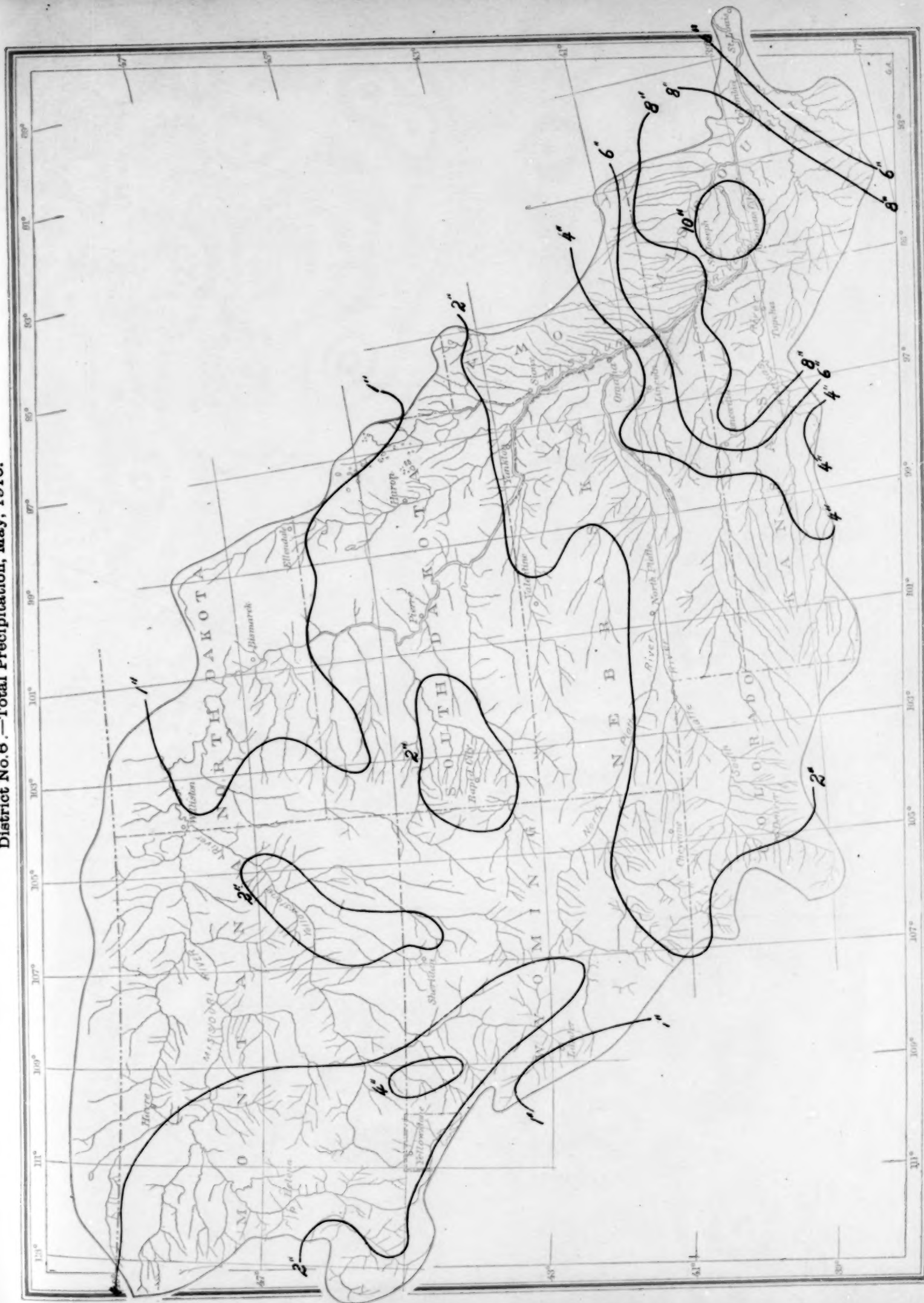
District No. 5.—Total Precipitation, May, 1910.



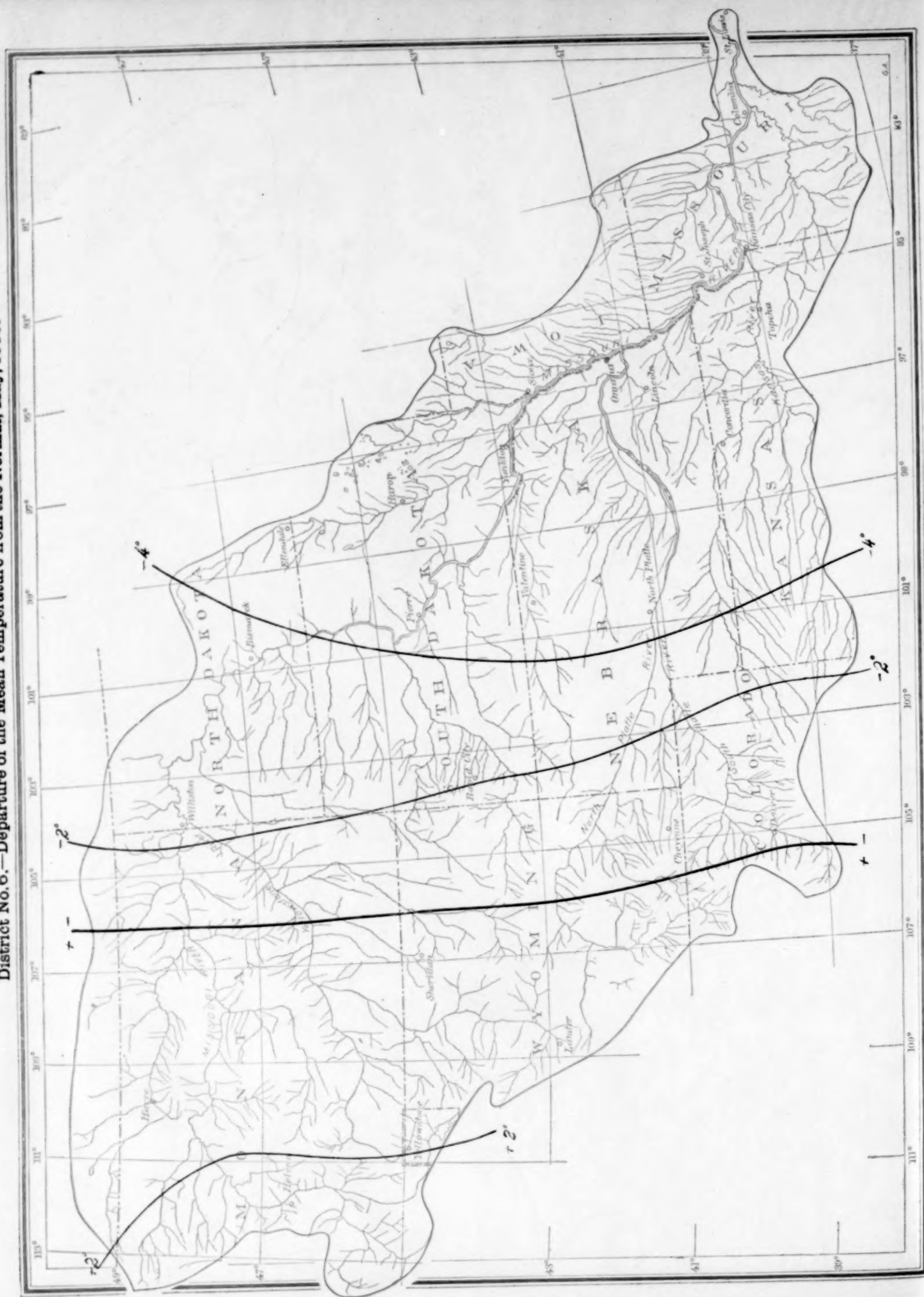
District No. 5.—Departure of the Mean Temperature from the Normal, May, 1910.



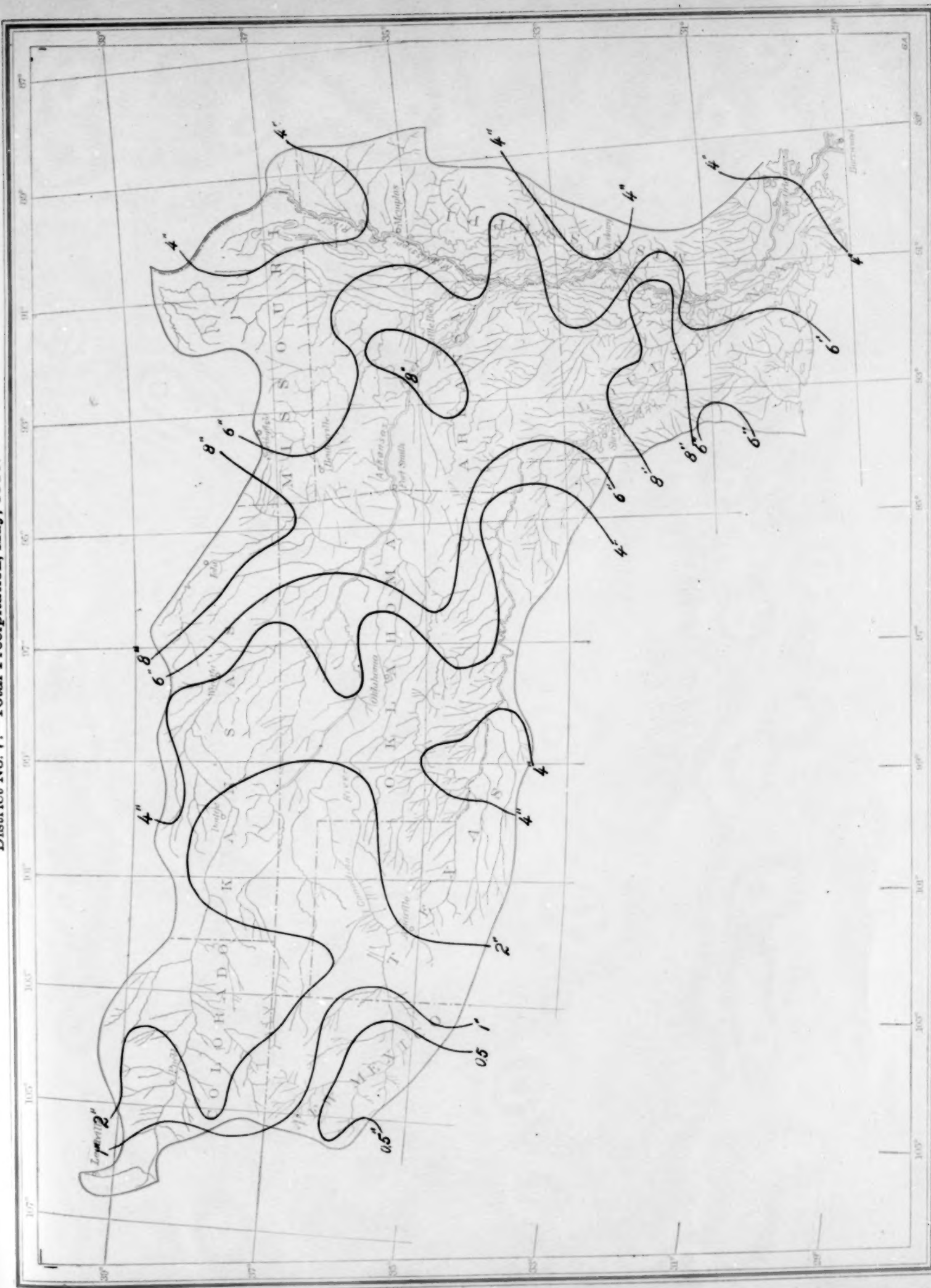
District No. 6.—Total Precipitation, May, 1910.



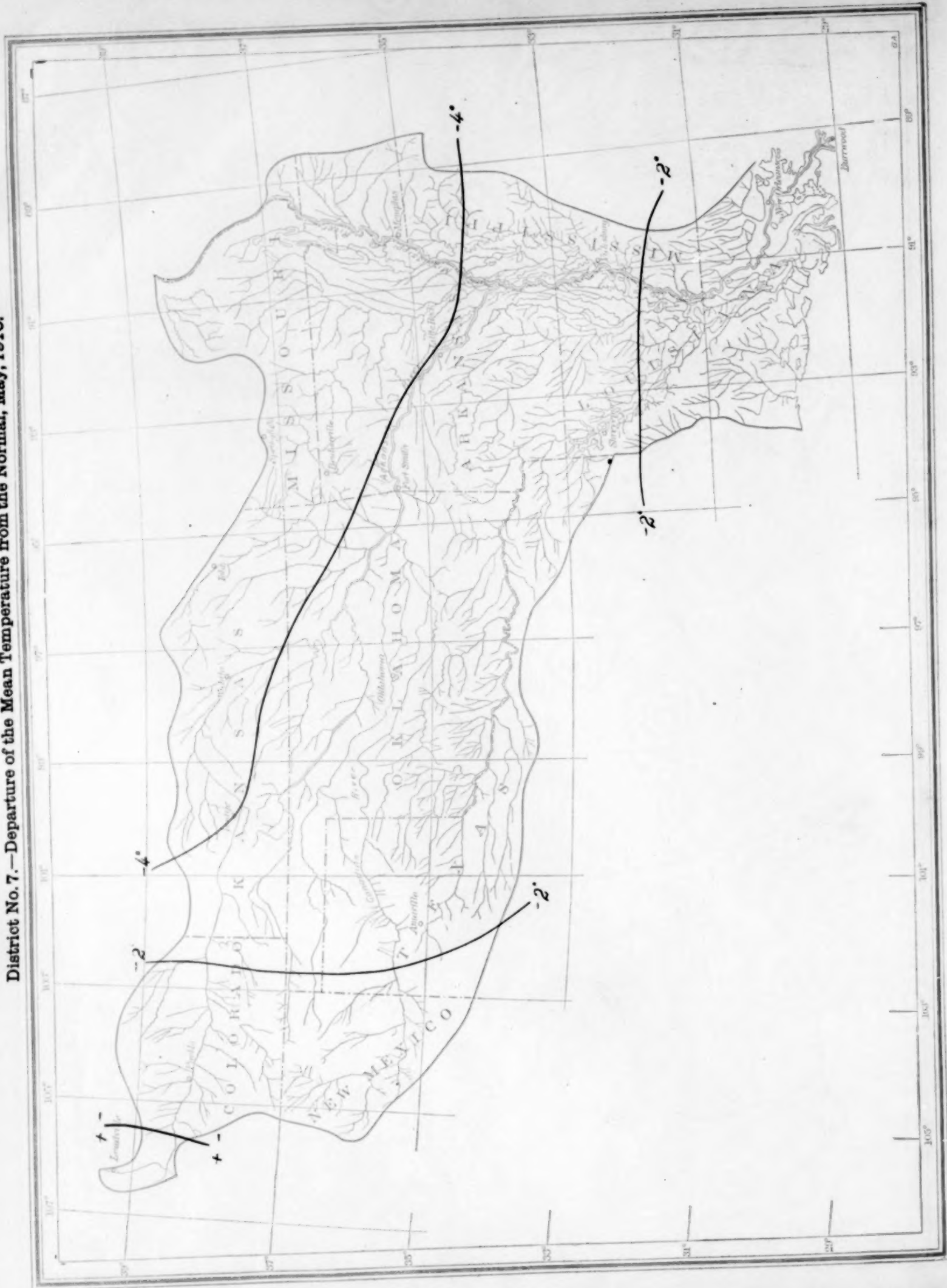
District No. 6.—Departure of the Mean Temperature from the Normal, May, 1910.



District No. 7.—Total Precipitation, May, 1910.



District No. 7.—Departure of the Mean Temperature from the Normal, May, 1910.



District No. 8.—Total Precipitation, May, 1910.



District No. 8.—Total Precipitation, May, 1910.

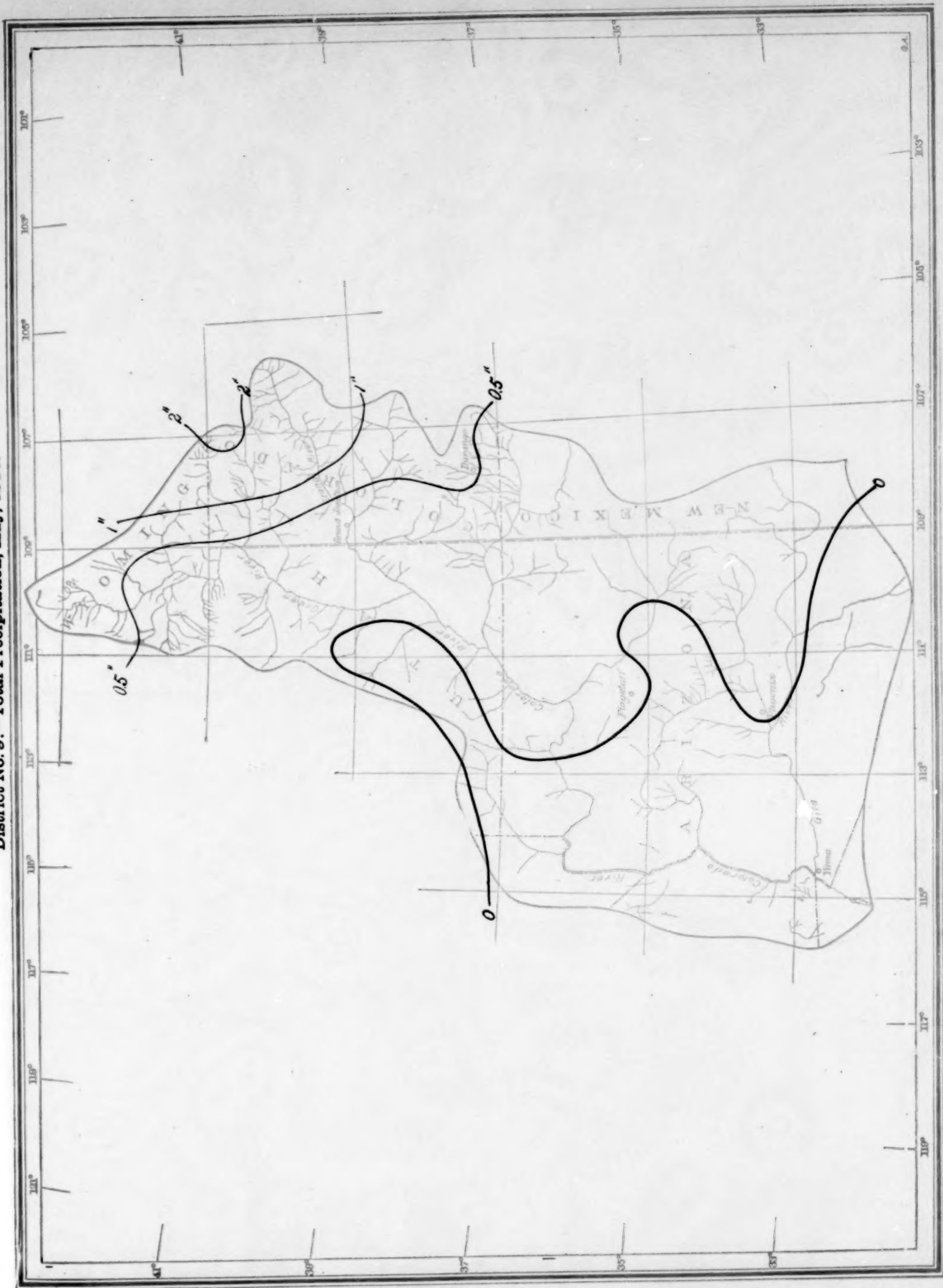


District No.8.—Departure of the Mean Temperature from the Normal, May, 1910.

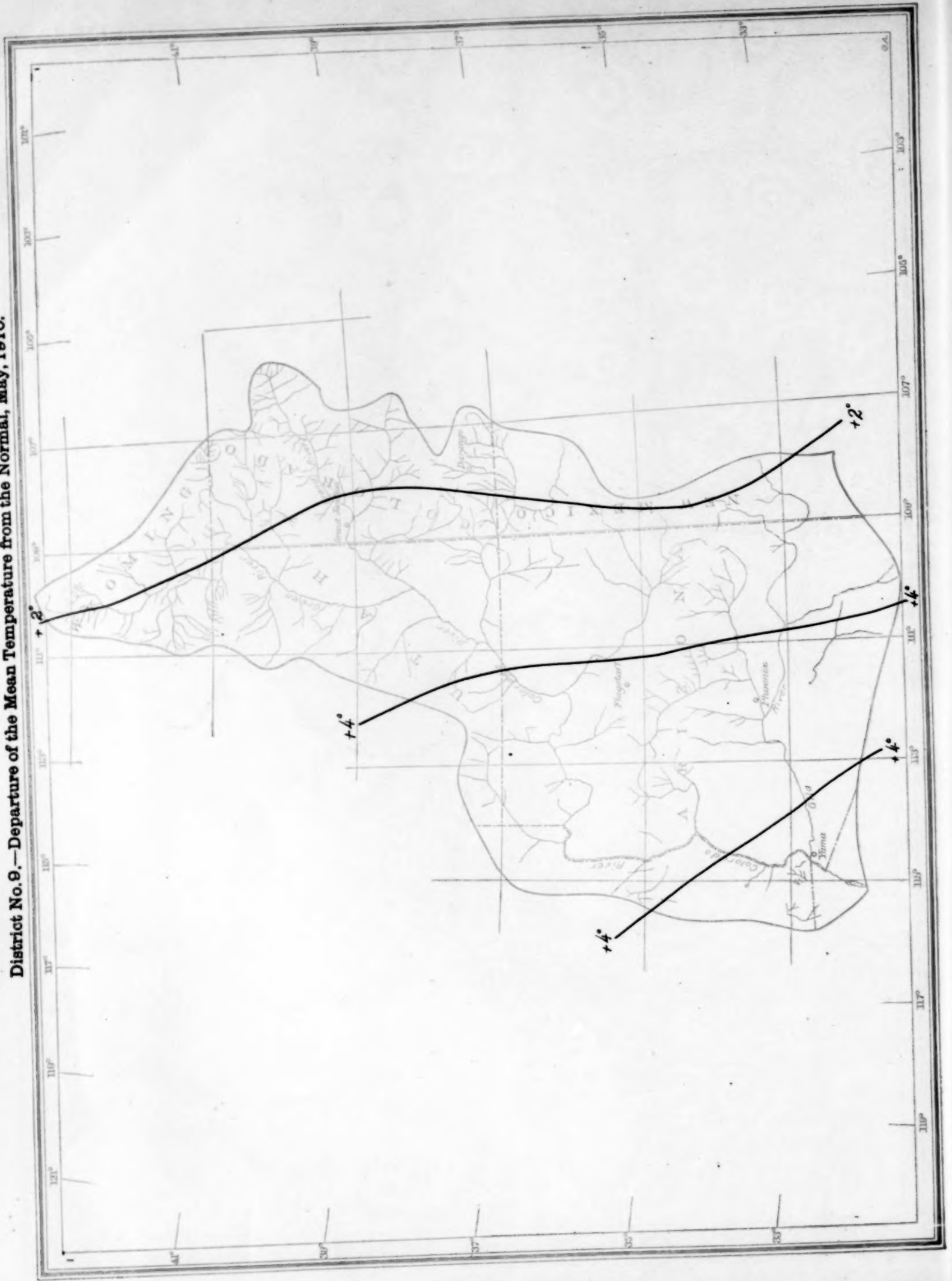


District No. 9.—Total Precipitation, May, 1910.

District No. 9.—Total Precipitation, May, 1910.



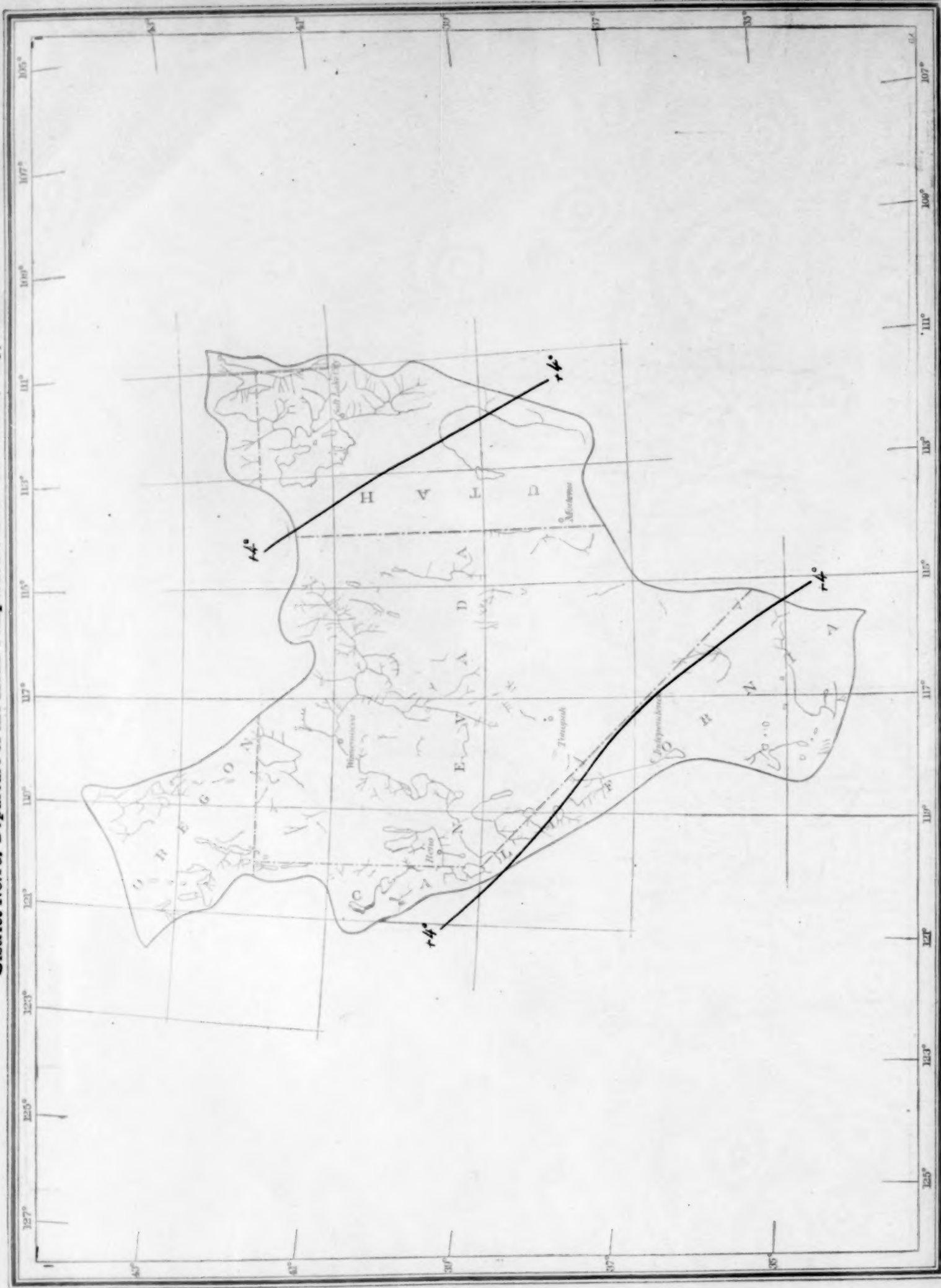
District No. 9.—Departure of the Mean Temperature from the Normal, May, 1910.



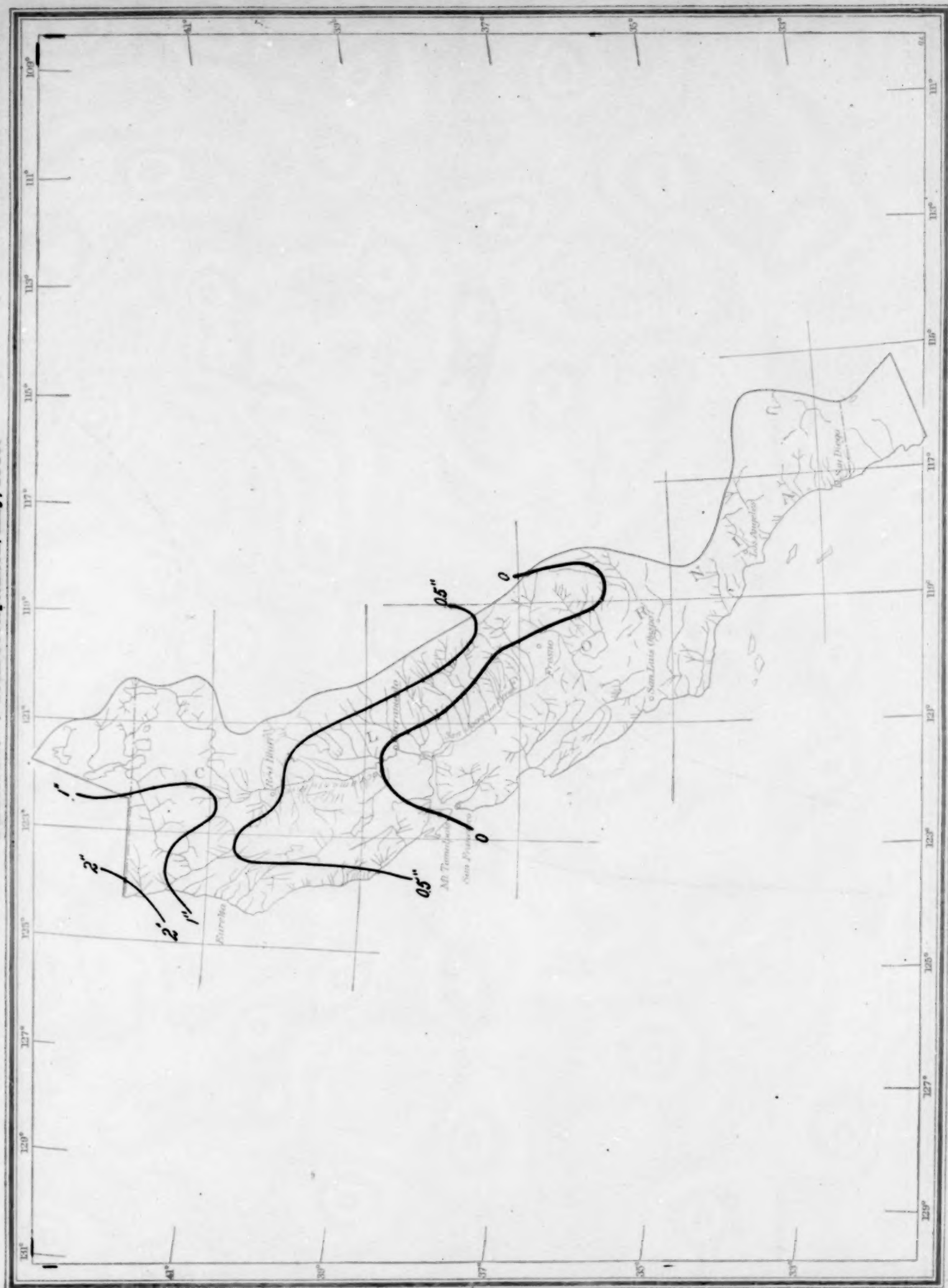
District No. 10.—Total Precipitation, May, 1910.



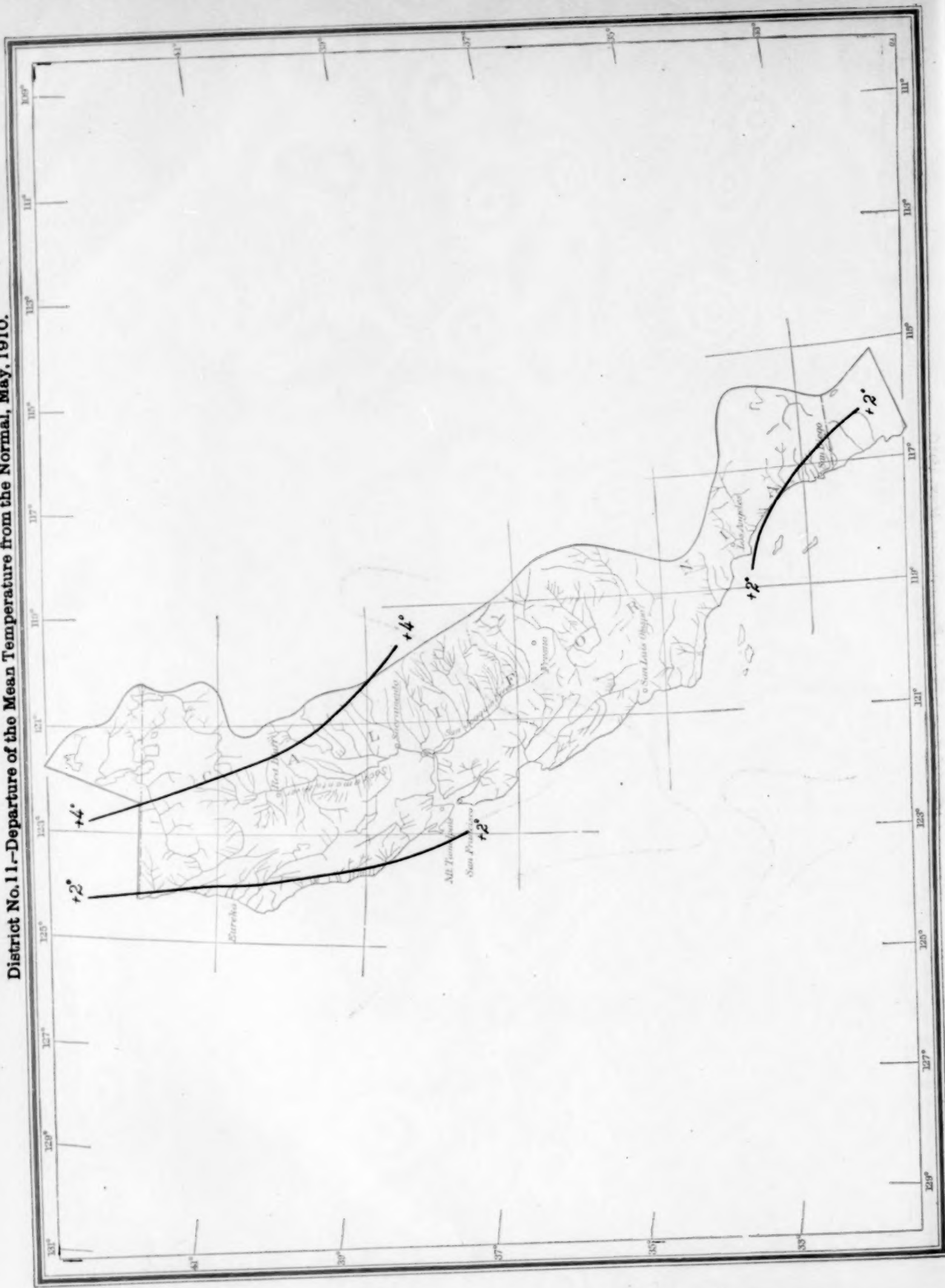
District No. 10.—Departure of the Mean Temperature from the Normal, May, 1910.



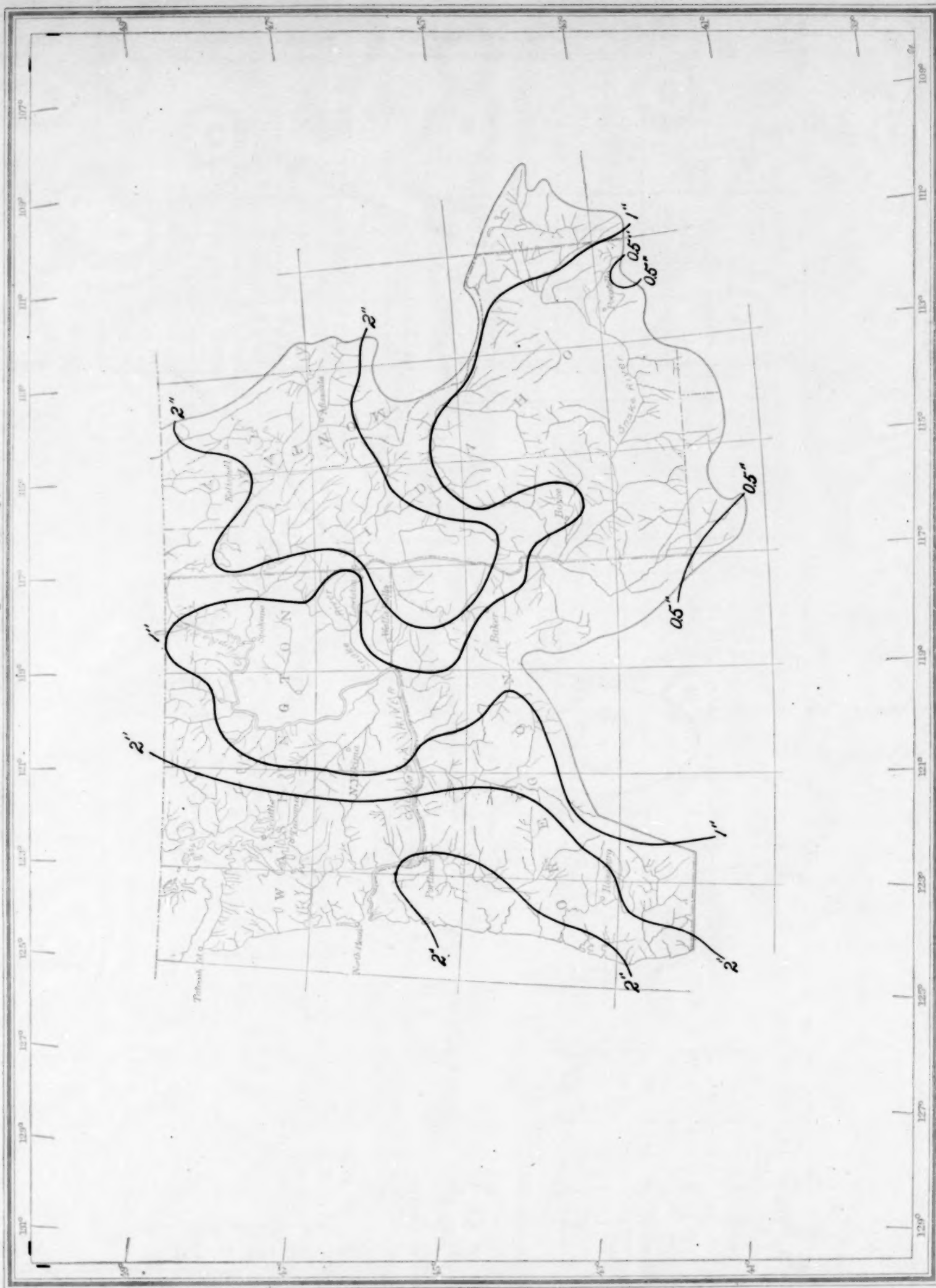
District No. 11.—Total Precipitation, May, 1910.



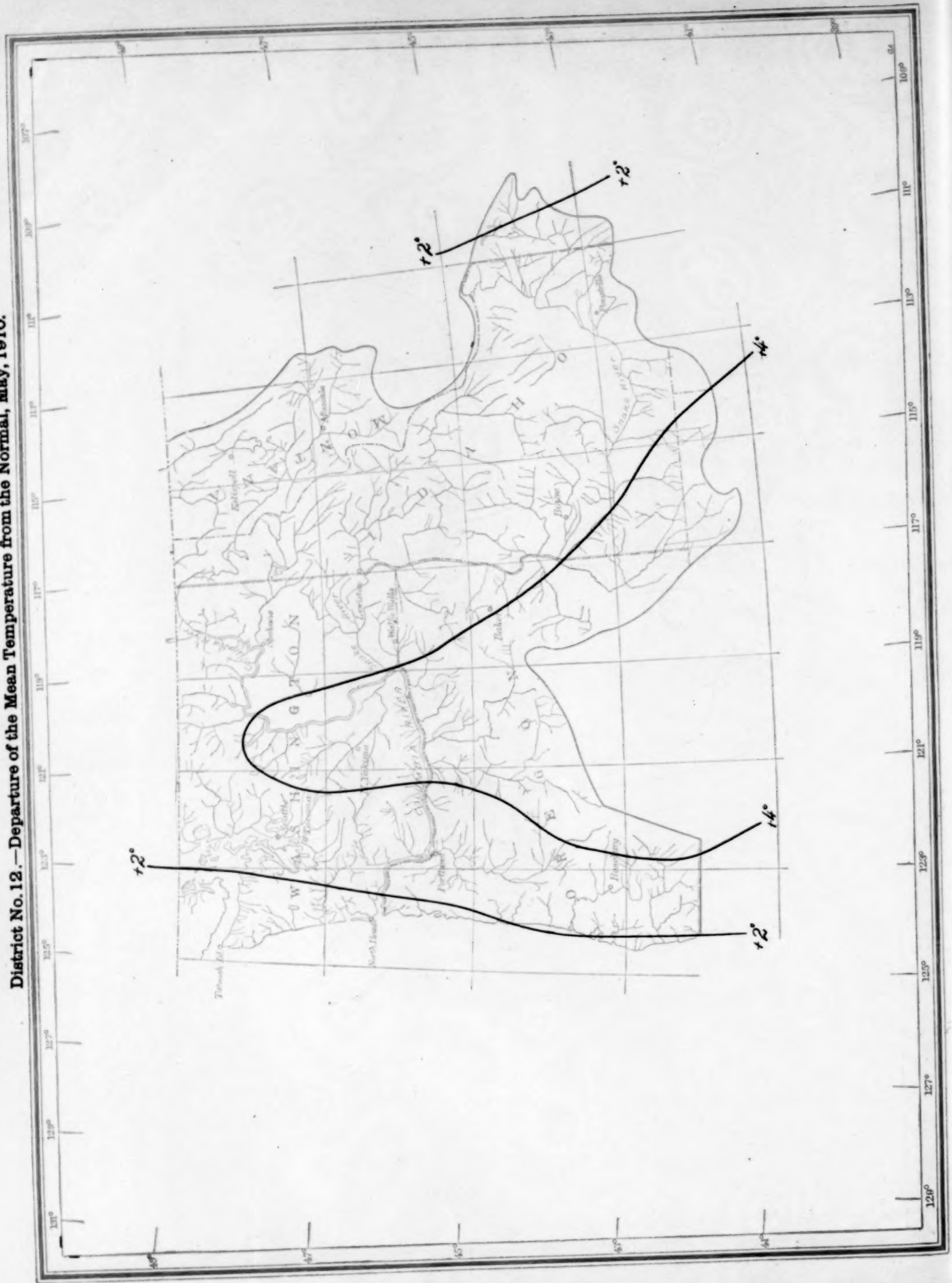
District No. 11.—Departure of the Mean Temperature from the Normal, May, 1910.



District No. 12.—Total Precipitation, May, 1910.



District No. 12.—Departure of the Mean Temperature from the Normal, May, 1910.



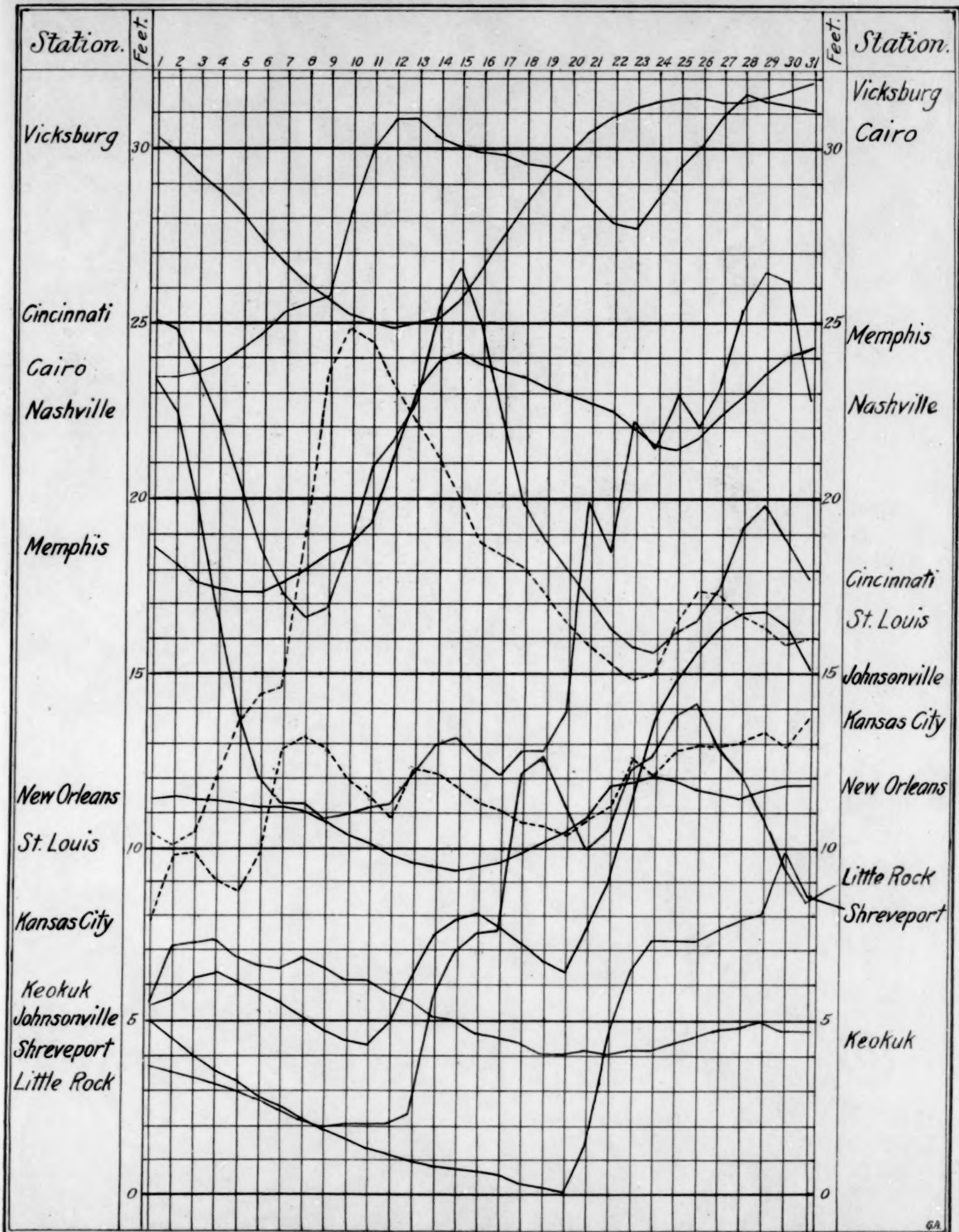


Chart II. Tracks of Centers of High Areas, May, 1910.

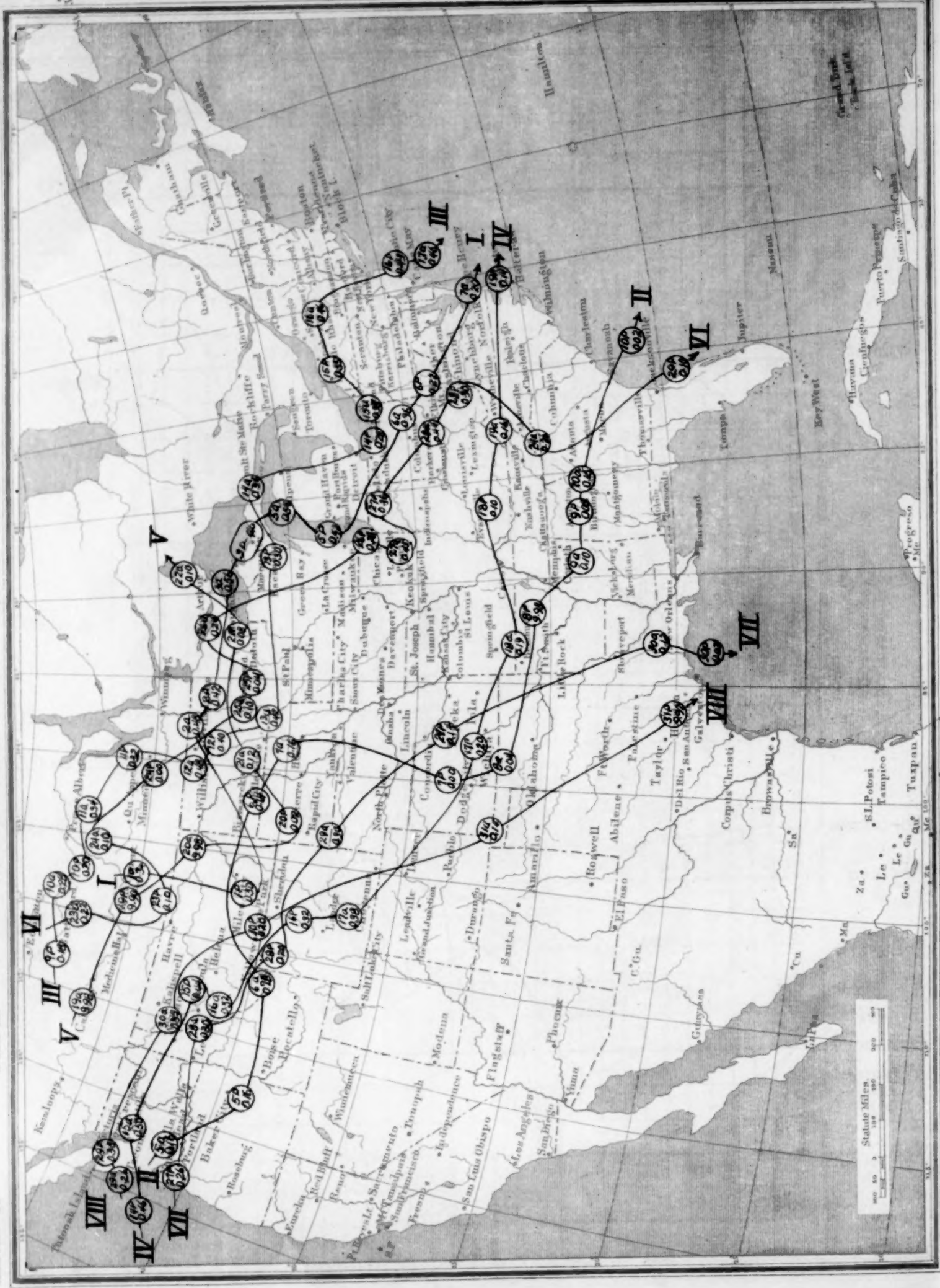


Chart III. Tracks of Centers of Low Areas, May, 1910.

Chart III. Tracks of Centers of Low Areas, May, 1910.

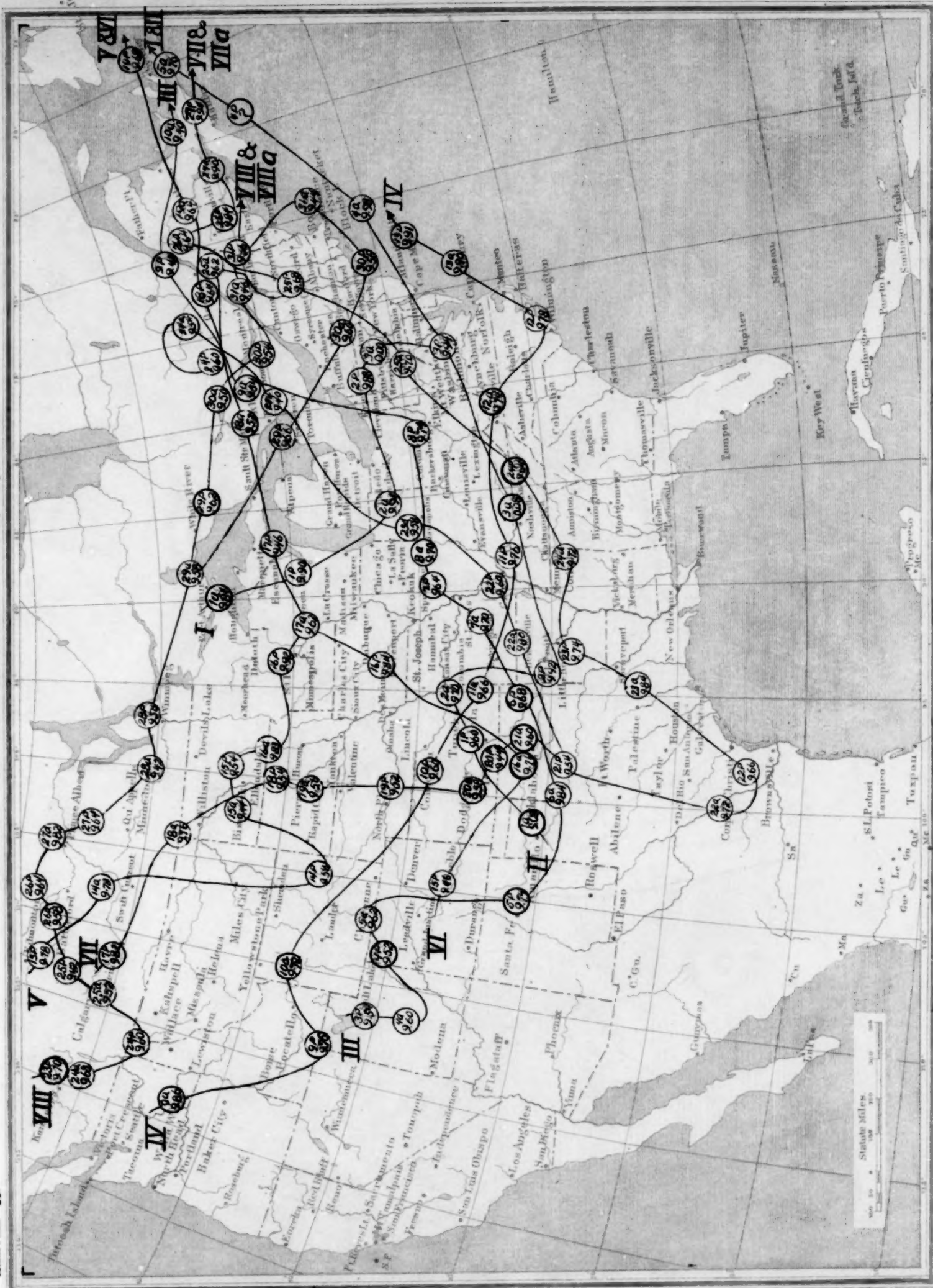


Chart IV. Departure of the Mean Temperature from the Normal, May, 1910.



Chart V. Total Precipitation, May, 1910.

Chart V Total Precipitation, May, 1910.

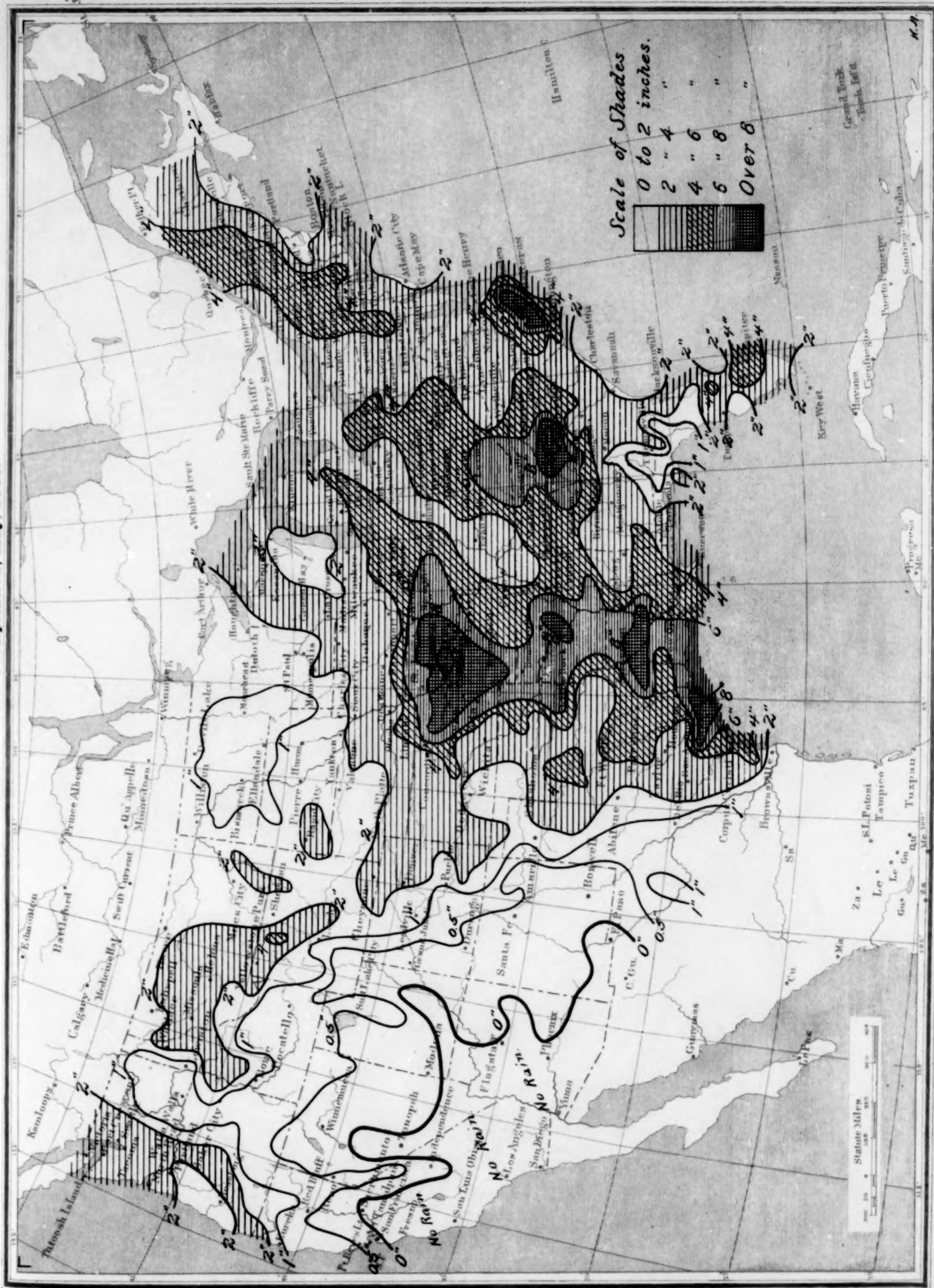


Chart VI. Percentage of Clear Sky between Sunrise and Sunset, May, 1910.

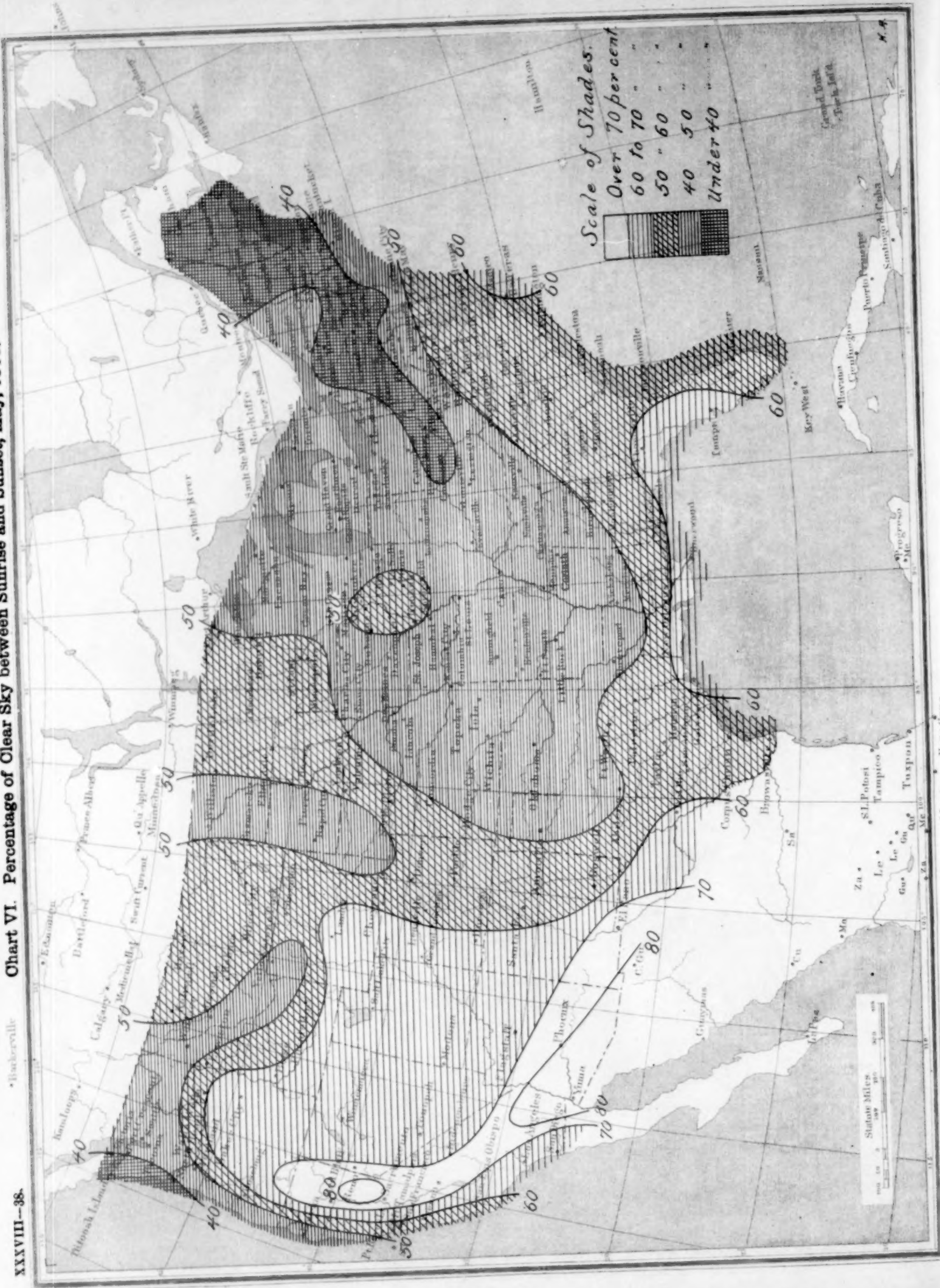
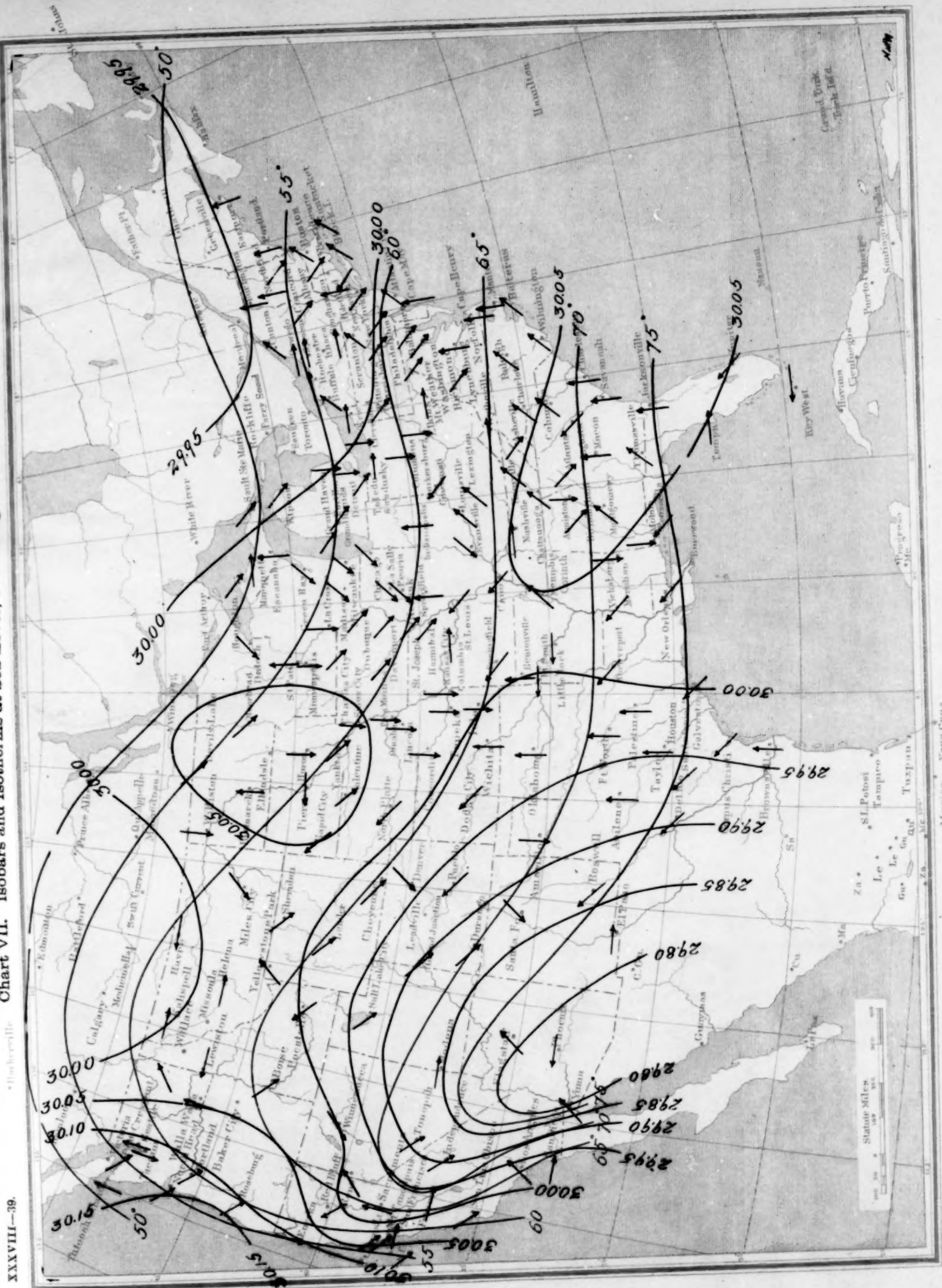
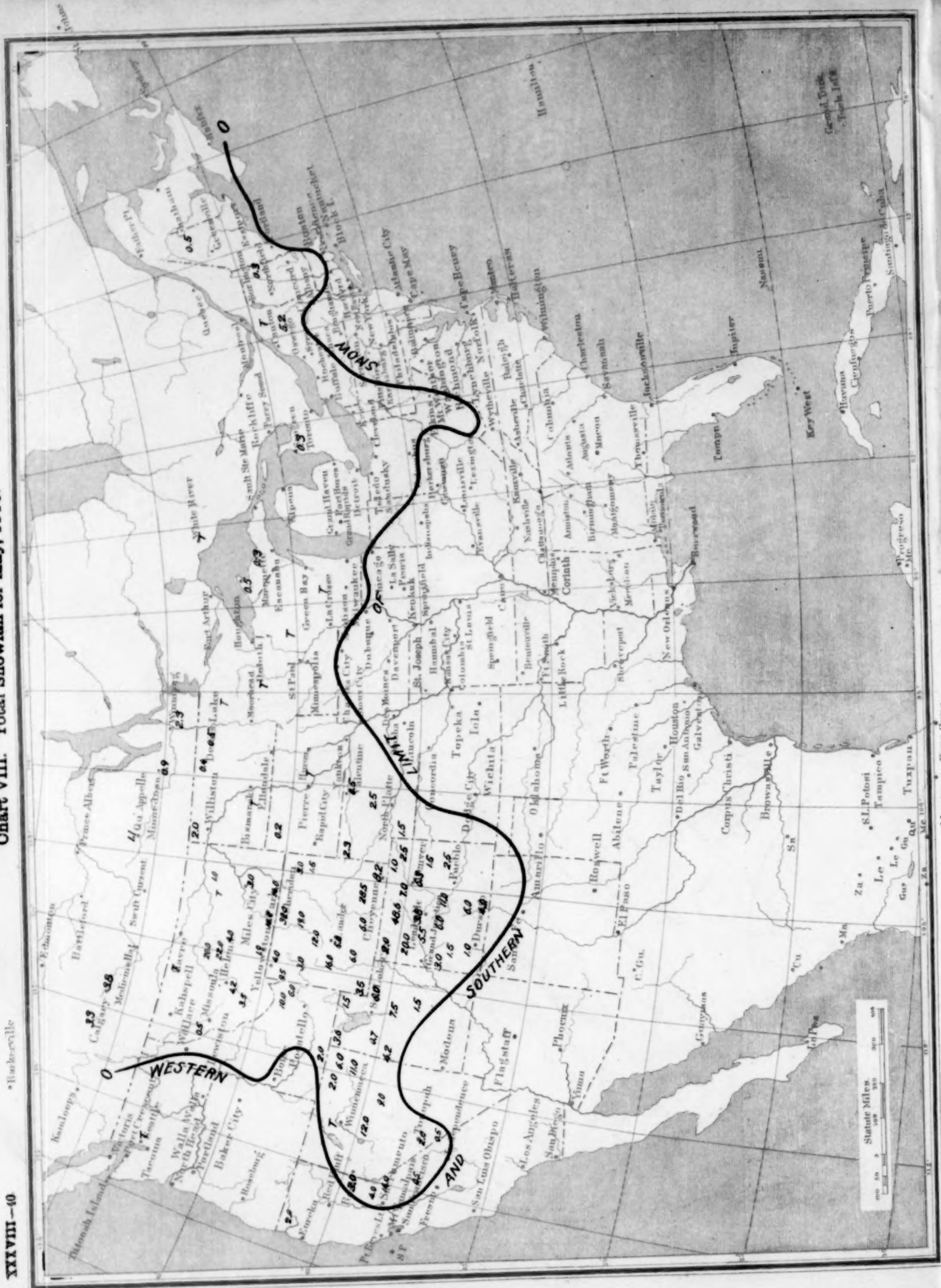


Chart VII. Isobars and Isotherms at Sea Level; Prevailing Winds, May, 1910.

Chart VII. Isobars and Isotherms at Sea Level; Prevailing Winds, May, 1910.

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